

A REAPPRAISAL OF THE ATTITUDE TOWARD  
SCIENCE IN ENGLISH ROMANTIC  
POETRY

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by  
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## CHAPTER I

### SCIENCE AND THE ROMANTICS

In a succinct statement of the relationship between present-day literature and science, William Powell Jones, in The Rhetoric of Science, states: "The conflict between the visionary power of the artist and the analytical method of the scientist has led to the twentieth century hostility of literature and science."<sup>1</sup> On this fact, most scholars and critics agree. However, when did the conflict between the artist and scientist become hostile? The hostility, or the seeds thereof, has often been read into the English Romantics' poetry.

Although the terms "Romantics" and "Romantic Period" are overworked, they are difficult to avoid. These terms are used in reference to the five major English poets from 1798-1832. The use of these terms does not sanction all the characteristics generally attributed to this period of English literature. While the poets of this period share some common characteristics, undue emphasis on the similarities of this or any other "period" of literature leads at times to a misinterpretation of the period itself as well

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<sup>1</sup>William Powell Jones, The Rhetoric of Science (Berkeley: University of California Press, 1966), p. 1.

as a misinterpretation of the period in relation to the general trends in English literature.

Because the Romantic Period comprises part of the nineteenth century, there seems to be a tendency to foist the scientific and moral traumas of the Victorian period back onto the Romantics. The Darwins are a striking case in point. Erasmus Darwin did foster the basic idea of evolution in his poems and several major Romantic poets were familiar with his work. However, it is not until Darwin's grandson connects evolution and the "survival of the fittest" that the full implications and ramifications become clear. Although the Romantic poets undoubtedly had to struggle to keep awake while reading Erasmus Darwin's The Botanic Garden, it is the Victorian poets who have to struggle with the disturbing concept of "the survival of the fittest."

The Romantic poets' reaction to science lies somewhere between the avid enthusiasm of many seventeenth and early eighteenth century poets and the decided hostility of many twentieth century poets. The Romantic reaction has not been fully explored. The use of nature and religion in the Romantic period has been studied, the Romantic concept of nature has been carefully delineated, and the use of science by individual authors has been explored. However, these and similar studies deal either incidentally with science

as an influence or concentrate on only one individual's use of science. In the case of Lord Byron, science can be dealt with only incidentally, for it plays a relatively insignificant role in his poetry. At the opposite extreme, the influence of science on the poetry of Percy Bysshe Shelley has often been carefully explored. But the positions of William Wordsworth, Samuel Taylor Coleridge, and John Keats are less clear. The relationship of the Romantics' use of science in the poetry of the seventeenth and eighteenth centuries is also rarely explored.

To re-evaluate science as an influence on the poetry of the English Romantics, it is necessary (1) to assess the role of science in literature prior to the Romantic Period, (2) to evaluate the use of science in English Romantic poetry, (3) to determine whether or not the Romantic poets were indeed hostile to science, and (4) to compare the Romantics' attitudes toward science with those of their literary predecessors.

## CHAPTER II

### INFLUENCE OF SCIENCE PRIOR TO ROMANTIC PERIOD

The relationship between modern or experimental science and English literature of the seventeenth and eighteenth centuries provides some guidelines for a re-evaluation of the Romantic poets' use of science. Modern science began in the late sixteenth and early seventeenth centuries with the discoveries of Galileo and Kepler. In his history of science, A. E. E. McKenzie described the two components of modern science as "a new experimental method of investigation and a mechanical, mathematical picture of the universe. . . ."<sup>1</sup> Both facets of modern science eventually affected literature.

Of the many scientists of the seventeenth century, several deserve special attention. Sir Francis Bacon's tremendous impact on scientific thinking has long been recognized. Although experimentation in science had certainly occurred before Bacon, Sir Francis was responsible for experimentation's new prominence. Bacon's basic belief was well summarized by R. F. Jones in his essay, "The

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<sup>1</sup>A. E. E. McKenzie, The Major Achievements of Science (Cambridge: University Press, 1960), I, 1.

# Background of the Attack on Science in the Age of Pope":

Sir Francis believed that all the phenomena in the universe were the result of the operation of the primary laws of nature, alone and combined. He did not think that these laws were many in number, but just as out of a relatively small number of letters innumerable words may be formed, so any number of phenomena could spring from various combinations of the laws. If man could discover these primary laws, then by combining them he could produce all natural phenomena and be indeed master of nature. But to discover them, Bacon held that it was first necessary to compile a natural history which would include all the data that the earth and the fullness thereof could contribute.<sup>1</sup>

The enthusiastic reception of this impossible task led to many experiments, volumes of collected data, and the Royal Society. Although Bacon's ideas and their implementation by Bacon's followers seemed to be of secondary importance in relationship to literature, they did underlie the attack on science by such men of letters as Alexander Pope and Johnathan Swift and have been well explored in R. F. Jones' fascinating essay.

The influence of Descartes was also recognizable. McKenzie compared the methods of Bacon and Descartes and concluded that "whereas Bacon's method was experimental and inductive that of Descartes was mathematical and deductive."<sup>2</sup> Descartes' mechanical philosophy, R. F. Jones noted,

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<sup>1</sup>R. F. Jones, "The Background of the Attack on Science in the Age of Pope," Eighteenth-Century English Literature, ed. James L. Clifford (New York: Oxford University Press, 1959), p. 70.

<sup>2</sup>McKenzie, op. cit., p. 84.



laid out a pattern for explaining all natural phenomena on a basis of matter, motion and mathematics, thus at one blow sweeping aside all the specious theories of traditional philosophies. Descartes saw in nature one vast machine filled with innumerable smaller ones.<sup>1</sup>

While Descartes managed to leave God in his scheme, God and man's soul fell victim to Thomas Hobbes' philosophy. These philosophical implications of science affected literature, just as the more tangible ideas of Bacon had.

A third major scientific influence was, of course, Sir Isaac Newton. Newton was influential because of his discoveries and their philosophical implications. For example, his use of the telescope and revelation of the orderly universe were greeted as an affirmation of God's order. A God who had planned and constructed such an orderly universe must be very wise indeed. However, Newton's physics seemed to undermine religion. This was contrary to Newton's personal belief; he felt there was no conflict between religion and science.

Specific scientific inventions as well as scientific ideas had great impact. The telescope not only greatly increased the scientist's knowledge of the universe but also provided new images for the poets. The microscope revealed the order of a miniature world, intriguing to

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<sup>1</sup>R. F. Jones, op. cit., p. 77.

scientists and poet alike. Such scientific inventions and ideas made the seventeenth century a period of transition from medieval science to modern science.

There was a pause in scientific advances for most of the eighteenth century; yet something was happening that was to have a profound effect on the Romantics. In his study of eighteenth century science, A. E. E. McKenzie noted that "during the hundred years following 1690 a succession of philosophers, Locke, Berkeley, Hume, and Kant, made a sustained attempt to assimilate. . .seventeenth century science into philosophy."<sup>1</sup> These philosophies and their assimilation would have a profound effect in the Romantic period.

Although John Locke's belief in experience as the sole source of knowledge has often been explored and explained and his philosophy is well known, one aspect is especially noteworthy here due to its importance to the study of science and poetics. Locke described two different types of ideas. He felt there were ideas of sensation and ideas of reflection. Through reflection the mind was able to organize the ideas of sensation into something more complex.<sup>2</sup> The seeds of Locke's theory later found fertile soil in the poetic imagination of William Wordsworth.

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<sup>1</sup>McKenzie, op. cit., p. 122.

<sup>2</sup>Ibid., p. 123.

Locke's philosophy set off a complex chain reaction. Briefly, George Berkeley criticized Locke and expounded his own theory that matter existed in the mind. Berkeley's ideas still gave God an important role, a role David Hume wrote out of the script. In addition to his cause-and-effect principle, Hume concluded that man's own ideas are all that man really knows. Immanuel Kant's solution to the problems of mind and matter, experience and wisdom, was, in a way, a compromise. Kant felt knowledge was partly

a priori, that is to say, prior to experience or innate in the mind. . . . Knowledge. . . has two components; that which is given by experience or the a posteriori element, and that which is provided by the mind or the a priori element.<sup>1</sup>

This philosophical reaction resulting from the assimilation of science influenced not only the literature of the eighteenth century, but also the literature of the Romantic period.

In addition to the scientific-philosophical chain reaction of Locke, Berkeley, Hume, and Kant, McKenzie recognized "the establishment of modern chemistry," "the formulation of the basic principles of geology," and two developments preparatory to nineteenth century science, "experimental investigation of electricity," and "classificatory and descriptive work in biology."<sup>2</sup> These scientific

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<sup>1</sup>Ibid., p. 126.

<sup>2</sup>Ibid., p. 122.

advances influenced both the literature of the eighteenth century and the Romantics: Wordsworth found geology helpful as he wrote his Guide to the Lakes; Shelley discovered the delights of chemistry and electricity; Keats pursued biological advances as a medical student; and Coleridge tried to assimilate all he could in each of these areas.

In summary, science advanced in four ways in the seventeenth and eighteenth centuries. First, there was a transition to new or experimental science. Second, broad scientific theories or methods were developed. Third, there were many specific scientific discoveries or inventions. And, fourth, scientific advances were assimilated philosophically. Each of these advances had an effect on the literature of the seventeenth and eighteenth centuries.

The scientific discoveries and their philosophical digestion affected the literature of the seventeenth and eighteenth centuries in a number of ways. Although the impact of science was often apparent in the literature of the seventeenth century, poets varied in the extent of their scientific knowledge and their use of science in poetry. The works of Sir Francis Bacon revealed his interest in science. Not only did Bacon describe "the preparations and instruments," "employments and functions," and "ordinances and rites" of Solomon's House, but also

suggested uses of science such as telephones and loud-speakers.<sup>1</sup>

Similarly, science permeates the writing of John Milton. Marjorie Nicolson felt that the discoveries of Galileo, particularly the discoveries made possible by the telescope, were reflected in the cosmic perspective of Milton.<sup>2</sup> In addition to this general scientific influence, Milton's poetry contains such references as "the Tuscan artist" (Galileo) and "the optic glass" (telescope). Yet Milton, like other poets of both the seventeenth and eighteenth centuries, often mingled his knowledge of new scientific advances with the use of older sources or streams of knowledge, traditions, and superstitions. For example, although Milton was aware of the Copernican theory of the universe, he chose to use the Ptolemaic concept of the universe in Paradise Lost for it best suited his purposes.

John Donne and Thomas Carew also blended various sources of knowledge in their poetry. In Donne's poetry can be found allusions to geography, mathematics, and Ptolemaic astronomy. The lines from one of his "Holy Sonnets,"

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<sup>1</sup>Charles W. Eliot (ed.), Essays, Civil and Moral and The New Atlantis; Areopagitica and Tractate on Education; and Religio Medic: (Volume III of The Harvard Classics; New York: P. F. Collier and Son, 1909), 181, 187.

<sup>2</sup>Marjorie Nicolson, Science and Imagination (Ithaca, New York: Cornell University Press, 1956), pp. 95-96.

"At the round earths imagin'd corners, blow/Your trumpets, Angel's. . .,"<sup>1</sup> graphically illustrate the poetic blend of scientific knowledge that the world is round with an older tradition that the world is square. Thomas Carew's poetry, too, contains reference to Ptolemaic cosmology as well as "the golden atoms of the day."<sup>2</sup> Although poets knew and used science, they did not discard older poetic traditions.

There were other poets who were amateur scientists but did not see fit to introduce this knowledge directly into their poetry. A prime example of this phenomena is John Dryden. Strangely enough, this Royal Society member only once expressed direct praise of science (in "To My Honor'd Friend, D. Chareton," in 1663), and he used alchemy and astrology as opposed to the new science for his poetic imagery.<sup>3</sup> Yet, W. P. Jones concluded, "Dryden respected science and was a pioneer in the new prose whose simplicity reflected the desire of the Royal Society for clarity and preciseness."<sup>4</sup> Therefore, even though Dryden was reticent

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<sup>1</sup> John Donne, The Complete Poetry and Selected Prose of John Donne, ed. Charles M. Coffin (New York: Random House, 1952), p. 249.

<sup>2</sup> Robert P. Tristram Coffin and Alexander M. Wither-  
spoon (eds.), Seventeenth Century Prose and Poetry (New York: Harcourt, Brace & Company, 1946), p. 130.

<sup>3</sup> W. P. Jones, op. cit., p. 37.

<sup>4</sup> Ibid.

to praise science directly or use scientific images, science did affect his prose style. In evaluating the period.

W. P. Jones felt that possibly Dryden and Sir Thomas Browne could be classified as amateur scientists who did not see any value in science as a literary subject.<sup>1</sup>

Within the same century other writers used science rarely or not at all. Many examples can be cited. Ben Jonson, in The Alchemist, was not satirizing a silly belief, but was reflecting that period's serious belief in alchemy subscribed to by such men as Sir Isaac Newton. Scattered references to the telescope, geography, and eclipses were found in the works of John Donne, Henry Vaughan and Sir Thomas Browne. Yet a study of the works of Shakespeare which fall within the early seventeenth century scarcely revealed the scientific-intellectual ferment of the period. Thus, the use of science in the literature of the seventeenth century varied widely.

This varied knowledge and use of science by literary figures continued into the eighteenth century. Just as in the seventeenth century, there were poets who were interested in science but did not introduce it into their poetry. Jones noted:

Along with the popularization of natural history in England, there arose a serious study of science

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<sup>1</sup>Ibid., p. 33.

by amateurs with literary bent, and from accurate observation of nature by writers like Thomas Gray and George Crabbe there came an understanding of nature that was to have a great influence on English literature, even though these two scientist-poets did not introduce much science into their poetry.<sup>1</sup>

Gray and Crabbe were students of botany, interested in accurate observation of nature and science, yet these two men used little of their scientific knowledge in their poetry.

However, just as there had been in the preceding century, there were eighteenth century poets who were not only interested in science, but were also interested in including their scientific knowledge in poetry. Before 1740, the amateur scientist continued to concentrate his efforts primarily on the stars and Newton,<sup>2</sup> and scientific allusions and images in literature reflected this interest. The literature of the early eighteenth century is filled with the praise of God and his orderly universe. Science offered proof of God's wisdom, and many long poems labored to demonstrate that science was illustrative of God's "order, providence, and divine wisdom."<sup>3</sup> Anthony Ashley Cooper, Lord Shaftsbury, an important influence on the Romantic poets, made reference to the importance of the natural order

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<sup>1</sup>Ibid., p. 31.

<sup>2</sup>Ibid., p. 15.

<sup>3</sup>Ibid., p. 20.



in The Moralists: A Rhapsody, when he said "But were we more so, as this inquiry would make us, we should then see beauty and decorum here as well as elsewhere in Nature, and the order of the moral world would then equal that of the natural."<sup>1</sup> The conviction of this statement rested securely upon the recent proof of just how orderly that natural world was. The poetry of Mark Aikenside also glorified the perfection of the universe. His poetry, too, was well-known to the Romantics.<sup>2</sup>

Although for a few years, 1740-1760, the amateur scientist concentrated his efforts on the study of the microscope and what it might reveal,<sup>3</sup> this interest was replaced by a far more important influence on the Romantics, the interest in botany and natural history which captivated the amateur scientist's attention after 1760.<sup>4</sup> John Aiken felt natural history was a respectable subject for poetry, and James Thomson's The Seasons demonstrated the validity of Aiken's belief. This influential pre-Romantic's use of science has long been recognized. For example, Dr. Johnson in his Lives of the Poets suggested that science helped

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<sup>1</sup>Ernest Bernbaum (ed.), Anthology of Romanticism (New York: The Ronald Press Company, 1948), p. 5.

<sup>2</sup>Ibid., p. 1066.

<sup>3</sup>W. P. Jones, op. cit., p. 15.

<sup>4</sup>Ibid.

Thomson "to recollect and combine, to arrange his discoveries, and to amplify the sphere of his contemplation."<sup>1</sup> Thomson used natural history and accurate observation, which was considered a part of the scientific method, to make his poetic description of the seasons more vivid. Jones expressed the importance of Thomson's influence on the Romantics by noting that

This blending of science and the georgic tradition in the poet's use of natural history becomes more understandable in the light of the continuity of religious themes in the eighteenth-century scientific imagery of nineteenth-century romantic poets is that of natural history, where nightingale and skylark, primrose and daffodil, are the most familiar of the multitudinous species observed in landscape and identified in science handbooks. Thomson's Seasons had a continuing, and even accelerating influence on this scientific georgic poetry. The blend of nature description and philosophic meditation in Thomson leads directly into the romantic poetry of the nineteenth century.<sup>2</sup>

Thomson's use of science was not only apparent in his blending of science and the georgic tradition, but also in his direct statements on the subject, such as his poem, "To the Memory of Sir Isaac Newton," in which he voiced pride in Newton's discoveries.

Two other noted writers who had an influence on the Romantics, were also interested in natural history.

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<sup>1</sup>Samuel Johnson, Lives of the Most Eminent English Poets (Philadelphia: Claxton, Remsen and Haffelfinger, 1868), II, 440.

<sup>2</sup>W. P. Jones, loc. cit.

Gilbert White, in The Natural History and Antiquities of Selborne, looks closely at nature with delightful results, such as his detailed observations of and about the turtle.<sup>1</sup> William Bartram's Incidents and Scenes in Florida abounds with his observations about nature and many scientific terms, such as "pistia," "nymphaea," "zanthoxylon," "pyramidal magnolia grandiflora," "yucca gloriosa," "palma elata," and "ambrosial citra."<sup>2</sup> Natural history would later receive the same close observation but more poetic expression in the poetry of the Romantics.

William Cowper had mixed feelings toward science. The Task, for example, revealed both negative and positive attitudes. Joseph Warren Beach described The Task as "full of protest against all scientific study not illuminated by religious insight."<sup>3</sup> In contrast, The Task also revealed Cowper's approval of Sir Isaac Newton's and Sir Matthew Hale's use of scientific knowledge to support religion<sup>4</sup> and his own interest in and use of the latest scientific discoveries. W. P. Jones supports this conclusion for he felt

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<sup>1</sup>Bernbaum, op. cit., pp. 95-96.

<sup>2</sup>Ibid., pp. 98-101.

<sup>3</sup>Joseph Warren Beach, The Concept of Nature in Nineteenth-Century English Poetry (New York: Pazeant Book Company, 1956), p. 111.

<sup>4</sup>Ibid.

that Cowper "enjoyed using the latest discoveries of science as far as his limited knowledge allowed."<sup>1</sup> This conclusion was supported by studies like that of Harry P. Kroiter.<sup>2</sup> Beach concurs with Jones and Kroiter by saying, "he used the rhetoric of his poetic powers to summarize the popular science that he knew. He was no philosopher; but he was able to persuade others that the wisdom of God was still revealed in nature."<sup>3</sup>

As previously mentioned, eighteenth century philosophers worked to assimilate seventeenth century science. After this assimilation, the periodical essays passed on the knowledge to the reading public. W. P. Jones felt The Spectator was most successful at the passing of scientific information and demonstrated several uses Addison made of science. For example, in The Spectator No. 121, Joseph Addison discussed the wisdom revealed in nature, and in No. 420 and No. 543, he made reference to the telescope and the microscope, and how these two scientific instruments revealed the wisdom in nature.<sup>4</sup> This use of science in The Spectator and the abundance of scientific handbooks helped create an

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<sup>1</sup>W. P. Jones, op. cit., p. 213.

<sup>2</sup>Harry P. Kroiter, "The Influence of Popular Science on William Cowper," Modern Philology, LXI (May, 1964), 281-287.

<sup>3</sup>Beach, op. cit., p. 217.

<sup>4</sup>W. P. Jones, op. cit., p. 24.

audience for Romantic poetry.

By the end of the eighteenth century, men like Erasmus Darwin devoted entire poems to the tedious explanation of scientific ideas or discoveries. The poetry of Erasmus Darwin proved that science can have an adverse effect on poetry; it became apparent that too much science killed poetry. The use of science was very obvious in Darwin's poetry--in fact, it was his poetry, and the results were disastrous. J. L. Lowes described Darwin's Botanic Garden as "metallic couplets" filled with a "portentous sediment of scientific notes."<sup>1</sup> W. P. Jones, after a twelve-page study of very scientific poems, concluded that

The Botanic Garden seems to prove that science, especially botany, had by 1790 become too technical to be treated as a suitable subject for poetry. Science can speak effectively in poetry at this time only in the gentler aspects of nature, catalogues of flowers and birds in nature description or the idea of divine wisdom and order observed in the natural history of rural England.<sup>2</sup>

The results of the use of too much science in poetry were known to the Romantic poets for most of them were familiar with Darwin's works. The net result seemed to be the impression that there is a limit to how much science can be used effectively in poetry.

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<sup>1</sup>John Livingston Lowes, The Road to Xanadu (New York: Vintage Books, 1959), p. 33.

<sup>2</sup>W. P. Jones, op. cit., p. 212.

Other poets had an intense interest in science quite different from Darwin's. They pointed out the limitations of science. In the seventeenth century, science had been mildly rebuked for not being aware of these limitations. After these gentle reprimands, science, in the eighteenth century, felt the stinging wit of both Alexander Pope and Jonathan Swift. The reasons for the scorn and satire born of the attitudes of Pope and Swift were carefully explored by R. F. Jones and were too numerous to recount. However, two faults mentioned by Jones serve as illustrations. The ranks of the scientists had been invaded by all sorts of rabble, and the experimentalists were chided for "the glaring faults of judgment which failed to distinguish between the worth of things and which proposed silly and impossible projects."<sup>1</sup> These faults are exposed by the scathing satire of Pope and Swift.

Another eighteenth century poet, Peter Pindar (John Walcott), took issue with science for similar reasons. For Walcott, the Linnaeus classification system, which influenced georgic poetry, interest in natural history, and travel book descriptions of flora and fauna, became the object of satire. Sir Joseph Banks, who became the focal point of much of the satire aimed at scientists, was of particular interest to Walcott. After a delightful account of Walcott's satire,

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<sup>1</sup>R. F. Jones, op. cit., p. 83.

W. P. Jones noted that science began to make great developmental strides after the day of Swift and Pope.<sup>1</sup> The decline of satirical poetry at the time corresponded with the improvements in science.

The attitudes of poets in both the seventeenth and eighteenth centuries varied widely, from complete disinterest to avid devotion, as did their interest in and use of scientific knowledge. Some poets were amateur scientists who ignored or used little of their scientific knowledge in their poetry. Those who used contemporary scientific discoveries also felt free to blend their scientific knowledge with any other or older source that met their poetic requirements. Some poets devoted entire poems to the praise of science, while others chose to ridicule or completely ignore science. Many found in science, proof of God's wisdom and order. With this background, the Romantic poets' use of science may be put into proper perspective.

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<sup>1</sup>W. P. Jones, op. cit., p. 199.

### CHAPTER III

#### WORDSWORTH AND SCIENCE

Critics seem to imply that Wordsworth simply did not like science. For example, Douglas Bush discusses Wordsworth's "strong and conscious revolt against the scientific view of the world and man."<sup>1</sup> And Alfred North Whitehead declares that Wordsworth "weakens his evidence by his dislike of science" and cites as examples the physician "peeping and botanizing on his mother's grave" and the famous line, "We murder to dissect."<sup>2</sup> With these statements Wordsworth's reaction to science seems clear. However, a closer examination of Wordsworth's poetry in light of the use of science in poetry in the seventeenth and eighteenth centuries reveals only slight variations.

As were the seventeenth and eighteenth century poets, Wordsworth was aware of the limitations of science. Newton Phelps Stallknecht agrees with Whitehead's conclusion that Wordsworth's "consistent theme is that the

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<sup>1</sup>Douglas Bush, "Wordsworth: A Minority Report," Wordsworth: Centenary Studies, ed. Gilbert T. Dunklin (Princeton: Princeton University Press, 1951), p. 8.

<sup>2</sup>Alfred North Whitehead, Science and the Modern World (New York: The Macmillan Company, 1926), pp. 120-121.



important facts of Nature elude the scientific method."<sup>1</sup> As Wordsworth told a scientist friend, William Rowan Hamilton,

he revered the kind of science which "raised the mind to the contemplation of God in His works," but that he would rather be a "superstitious old woman" than subject himself to "all science which was a bare collection of facts for their own sake, or to be applied merely to the material use of life."<sup>2</sup>

Wordsworth does not condemn all science, but he does recognize its limitations.

This recognition of the limits of science can be found throughout Wordsworth's poetry. In "The Tables Turned," Wordsworth offers an alternate source of wisdom to a friend who had earlier chided him. After describing the wisdom nature offers, Wordsworth notes

Sweet is the lore which Nature brings;  
Our meddling intellect  
Mis-shapes the beauteous forms of things:--  
We murder to dissect.

Enough of Science and of Art;  
Close up those barren leaves;  
Come forth, and bring with you a heart  
That watches and receives.<sup>3</sup>

Wordsworth here does not chide all of science, but he does disparage idle dissection. Fairchild feels that this

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<sup>1</sup>Newton Phelps Stallknecht, Strange Seas of Thought (Durham: Duke University Press, 1945), p. 83.

<sup>2</sup>Hoxie Neale Fairchild, Romantic Faith (Volume III of Religious Trends in English Poetry; New York: Columbia University Press, 1949), 241.

<sup>3</sup>William Wordsworth, The Poetical Works of Wordsworth, ed. Thomas Hutchinson (London: Oxford University Press, 1966), p. 377.

suspicion of analysis, of dissection, is typical. . . . Logic is chiefly analytic. Romantic thought is chiefly synthetic. It wants large inspiring wholes, and it is very impatient of any factual obstacle that may lie in the way of obtaining them.<sup>1</sup>

Wordsworth feels the "facts" sometimes block or hide the truth, a unity he is seeking. Beach supports this conclusion with his analysis of the thought, "We murder to dissect."

Again, he refers primarily, not to anatomical but to psychological dissection. And what he disparages is not so much the dissection of the mind as the failure to recognize the unity of the mind which has thus been divided into its component elements.<sup>2</sup>

Although it is fair to say Wordsworth feels dissection can be disastrous, it is unfair to interpret "We murder to dissect" as a blanket indictment against science.

Another passage often quoted as an example of Wordsworth's dislike for science is taken from "A Poet's Epitaph." Critics cite the stanzas dealing with the Physician who "would peep and botanize/Upon his mother's grave."<sup>3</sup> However, it is important to remember that Wordsworth also asks,

Art thou a Statist in the van  
Of public conflicts trained and bred?  
--First learn to love one living man;  
Then may'st thou think upon the dead.

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<sup>1</sup>Hoxie Neale Fairchild, The Romantic Quest (New York: Russell and Russell, Inc., 1965), p. 111.

<sup>2</sup>Beach, op. cit., p. 196.

<sup>3</sup>Wordsworth, op. cit., p. 380.

A Lawyer art thou?--draw not nigh!  
Go, carry to some fitter place  
The keenness of that practised eye,  
The hardness of that sallow face.

Art thou a Man of purple cheer?  
A rosy Man, right plump to see?  
Approach; yet, Doctor, not too near,  
This grave no cushion is for thee.

Or art thou one of gallant pride,  
A soldier and no man or chaff?  
Welcome!--but lay thy sword aside,  
And lean upon a peasant's staff.

. . . . .

A Moralist perchance appears;  
Led, Heaven knows how! to this poor sod:  
And he has neither eyes nor ears;  
Himself his world, and his own God;

One to whose smooth-rubbed soul can cling  
Nor form, nor feeling, great or small;  
A reasoning, self-sufficing thing,  
An intellectual All-in-all!<sup>1</sup>

Wordsworth seems to be cautioning against too much learning of any kind for he also admonishes the physician, statistician, lawyer, soldier, and moralist. Beach supports this conclusion:

But no real scorn for science is manifest in this reference, which goes along with similar disparaging characterizations of a lawyer, a divine, a Soldier, a moralist, and a public man ("statistician"). Each one of these is an unsympathetic--because blind and heartless--representative of his profession--all of them set in contrast to the poet, who, weak and idle in comparison with these serious men, is praised for his humane feeling and unpretentious wisdom.<sup>2</sup>

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<sup>1</sup>Ibid.

<sup>2</sup>Beach, op. cit., p. 197.

It is clear that Wordsworth is not singling out the man of science for attack.

In the second book of The Prelude, Wordsworth once again reiterates that scientific knowledge is limited. In his tribute to Coleridge, he declares,

Thou, my friend! art one  
More deeply read in thy own thoughts; to thee  
Science appears but what in truth she is  
Not as our glory and our absolute boast,  
But as a succedaneum, and a prop  
To our infirmity. No officious slave  
Art thou of that false secondary power  
By which we multiply distinctions, then  
Deem that our puny boundaries are things  
That we perceive, and not that we have made.  
To thee, unblinded by these formal arts,  
The unity of all hath been revealed.<sup>1</sup>

Again, Wordsworth is not oblivious to the value of science, but he does point out its limitations. Science is a "prop," a "secondary power/By which we multiply distinctions."

Throughout his poetry, Wordsworth seems to be constantly aware of the limitations of science, but he does not seem to challenge science as a source of knowledge. However, he does seem to be challenging science in a general way in the fourth book of The Excursion:

Shall men for whom our age  
Unbaffled powers of vision hath prepared,  
To explore the world without and world within,  
Be joyless as the blind? Ambitious spirits--  
Whom earth, at this late season, hath produced  
To regulate the moving spheres, and weigh  
The planets in the hollow of their hand;

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<sup>1</sup>Wordsworth, op. cit., p. 505.

And they who rather dive than soar, whose pains  
 Have solved the elements, or analysed  
 The thinking principle--shall they in fact  
 Prove a degraded Race? and what avails  
 Renown, if the presumption make them such?  
 Oh! there is laughter at their work in heaven!  
 Enquire of ancient Wisdom; go, demand  
 Of mighty Nature, if 'twas ever meant  
 That we should pry far off yet be unraised;  
 That we should pore, and dwindle as we pore,  
 Viewing all objects unremittingly  
 In disconnection dead and spiritless;  
 And still dividing, and dividing still,  
 Break down all grandeur, still unsatisfied  
 With the perverse attempt, while littleness  
 May yet become more little; waging thus  
 An impious warfare with the very life  
 Of our own souls!<sup>1</sup>

This description of science "viewing all objects unremittingly" sounds like the work of a man who read and enjoyed Gulliver's Travels and A Tale of a Tub. However, this is not the approach to science Wordsworth normally takes. In fact, Beach suggests this is "the only passage in Wordsworth which might properly be regarded as attacking the general scientific tendencies of his time."<sup>2</sup> Wordsworth seems to wonder if science can see the largeness of life. On this point, Whitehead observes that

Wordsworth in his whole being expresses a conscious reaction against the mentality of the eighteenth century. This mentality means nothing else than the acceptance of the scientific ideas at their face value. Wordsworth was not bothered by any intellectual antagonism. What moved him was a moral repulsion. He felt that something had been left out, and that what had been left out comprised everything that was most important.<sup>3</sup>

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<sup>1</sup>Ibid., pp. 636-637.

<sup>2</sup>Beach, loc. cit.

<sup>3</sup>Whitehead, op. cit., p. 112.

Perhaps again Wordsworth is only sounding the limitations of science, only this time not limiting his comment to the reckless accumulation of meaningless facts.

Whether attacking a specific method of scientific investigation, pointing out the limitations of science, or questioning general tendencies of science, Wordsworth's position is not a new one. As Beach concludes, Wordsworth

had no antagonism to scientific studies, though he deprecated the mechanistic tendency of some scientists who were incapable of viewing the universe in the large, and who took no account of the animating and motivating force behind all natural phenomena.<sup>1</sup>

Wordsworth, as poets of the seventeenth and eighteenth centuries had before him, recognizes the limitations of science.

Wordsworth is also aware of the limitations of science as poetic subject matter. In his "Preface" to the Lyrical Ballads, he says,

Poetry is the first and last of all knowledge--it is as immortal as the heart of man. If the labours of Men of science should ever create any material revolution, direct or indirect, in our condition, and in the impressions which we habitually receive, the Poet will sleep then no more than at present; he will be ready to follow the steps of the Man of science, not only in those general indirect effects, but he will be at his side, carrying sensation into the midst of the objects of the science itself. The remotest discoveries of the Chemist, the Botanist, or Mineralogist, will be as proper objects of the Poet's art as any upon which it can be employed, if the time should ever come when these things shall be familiar to us, and the relations

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<sup>1</sup>Beach, op. cit., p. 22.

under which they are contemplated by the followers of these respective sciences shall be manifestly and palpably material to us as enjoying and suffering beings. If the time should ever come when what is now called science, thus familiarised to men, shall be ready to put on, as it were, a form of flesh and blood, the Poet will lend his divine spirit to aid the transfiguration, and will welcome the Being thus produced as a dear and genuine inmate of the household of man.<sup>1</sup>

Despite this positive attitude toward science, Wordsworth's poetry is not highly saturated with scientific allusions. As Wordsworth stipulates, science will be used when "things shall be familiar to us" and "manifestly and palpably material to us." At the time of this statement, science was becoming increasingly complex and less familiar to the layman. For this reason, Wordsworth continues to use science much as other poets had before him.

The poetry of Darwin may explain why Wordsworth does not constantly find even "familiar" science "manifestly and palpably material." Darwin tried to express his scientific knowledge poetically. His final attempt to blend science and poetry in The Love of Plants is described by M. H. Abrams as unholy and degrading to both poetry and science.<sup>2</sup>

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<sup>1</sup>William Wordsworth, Prefatory Essays, Postscripts and Notes (Volume X of The Complete Poetical Works of William Wordsworth; Boston: Houghton Mifflin Company, 1911), 23-24.

<sup>2</sup>M. H. Abrams (ed.), English Romantic Poets (New York: Oxford University Press, Inc., 1960), p. 85.

The reasons for this degradation are explored by W. P. Jones.

He notes that

The Botanic Garden seems to prove that science, especially botany, had by 1790 become too technical to be treated as a suitable subject for poetry. Science can speak effectively in poetry at this time only in the gentler aspects of nature, the catalogues of flowers and birds in nature description or the idea of divine wisdom and order observed in the natural history of rural England.<sup>1</sup>

Perhaps because Darwin's poetry illustrates so well the disastrous results of too much inanimate technical scientific information, Wordsworth wisely limits his use of science in poetry.

Although Wordsworth recognizes the limitations of science in general and as a poetic subject, he does find science to have some importance. A lengthy explanation of the role of science is found in the fifth book of The Prelude, "Books," as Wordsworth describes his meeting with the Arab who carries the stone and the shell. Wordsworth remembers that he had been sitting and musing on "poetry and geometric truth,/And their high privilege of lasting life," when he had fallen asleep. As he slept he

. . .Passed into a dream.  
I saw before me stretched a boundless plain  
Of sandy wilderness, all black and void,  
And as I looked around, distress and fear  
Came creeping over me, when at my side,  
Close at my side, an uncouth shape appeared  
Upon a dromedary, mounted high,  
He seemed an Arab of the Bedouin tribes:  
A lance he bore, and underneath one arm  
A stone, and in the opposite hand a shell

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<sup>1</sup>W. P. Jones, op. cit., p. 212.



Of a surpassing brightness. At the sight  
 Much I rejoiced, not doubting but a guide  
 Was present, one who with unerring skill  
 Would through the desert lead me; and while yet  
 I looked and looked, self-questioned what  
     this freight

Which the new-comer carried through the waste  
 Could mean, the Arab told me that the stone  
 (To give it in the language of the dream)  
 Was "Euclid's Elements;" and "This," said he,  
 "Is something of more worth;" and at the word  
 Stretched forth the shell, so beautiful in shape,  
 In colour so resplendent, with command  
 That I should hold it to my ear. I did so,  
 And heard that instant in an unknown tongue,  
 Which yet I understood, articulate sounds,  
 A loud prophetic blast of harmony;  
 An Ode, in passion uttered, which foretold  
 Destruction to the children of the earth  
 By deluge, now at hand. No sooner ceased  
 The song, than the Arab with calm look declared  
 That all would come to pass of which the voice  
 Had given forewarning, and that he himself  
 Was going then to bury those two books:  
 The one that held acquaintance with the stars,  
 And wedded soul to soul in purest bond  
 Of reason, undisturbed by space or time;  
 The other that was a god, yea many gods,  
 Had voices more than all the winds with power  
 To exhilarate the spirit, and to soothe  
 Through every clime, the heart of human kind.<sup>1</sup>

The rider then hurries off and the dreamer follows. The Arab pauses only once, to comment that the "bed of glittering light" is "the water of the deep gathering upon us, and then leaves, still carrying his two-fold treasure. The poet awakes in terror. It is obvious from the dream Wordsworth describes and his further comments on the dream that he believes poetic insight is superior to the knowledge provided by factual science, for science weds "soul to soul

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<sup>1</sup>Wordsworth, The Poetical Works of Wordsworth, op. cit., pp. 522-523.

in purest bond/Of reason," while poetry soothes "the heart of human kind." David Perkins supports this interpretation, for he feels that abstract science is a way to escape, but is not a final resolution of the human dilemma for abstract science suppresses feeling.<sup>1</sup> However, it must also be noted that Wordsworth, although he feels poetic knowledge or insight is a superior guide, refers to the stone and shell as a "two-fold treasure." His preference is clear; however, he does recognize the other source of knowledge as being worthwhile.

In the sixth book of The Prelude, "Cambridge and the Alps," Wordsworth again recognizes science as a source of meaningful knowledge. He states that one may not

. . . entirely overlook  
 The pleasure gathered from the rudiments  
 Of geometric science. Though advanced  
 In these enquiries, with regret I speak,  
 No farther than the threshold, there I found  
 Both elevation and composed delight;  
 With Indian awe and wonder, ignorance pleased  
 With its own struggles, did I meditate  
 On the relation those abstractions bear  
 To Nature's laws, and by what process led,  
 Those immaterial agents bowed their heads  
 Duly to serve the mind of earth-born man;  
 From star to star, from kindred sphere to sphere,  
 From system on to system without end.

More frequently from the same source I drew  
 A pleasure quiet and profound, a sense  
 Of permanent and universal sway,  
 And paramount belief; there, recognized  
 A type, for finite natures, of the one  
 Supreme Existence, the surpassing life

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<sup>1</sup>David Perkins, Quest for Permanence (Cambridge: Harvard University Press, 1959), pp. 37-40.

Which--to the boundaries of space and time,  
 Of melancholy space and doleful time,  
 Superior, and incapable of change,  
 Nor touched by welterings of passion--is,  
 And bath the name of, God. Transcendent peace  
 And silence did await upon these thoughts.<sup>1</sup>  
 That were a frequent comfort to my youth.

Although he feels regret that he advanced only to the threshold of his enquiries into geometric science, he does derive pleasure, elevation and delight from such studies. Even more frequently, he feels he draws from his studies of the rudiments of geometric science a revelation of God's wisdom, much as did poets of the seventeenth and eighteenth centuries.

Wordsworth, then, does recognize both the value and the limitations of science as a source of knowledge. But how does this recognition affect his poetry? W. P. Jones' book, The Rhetoric of Science, centers on the use of science in the poetry of the eighteenth century. However, near the end of his study, Jones summarizes the old and the new in scientific poetry. He feels that the old scientific poetry reveals divine order and that the new is a "sympathetic observation of English trees, flowers and birds. . . ." <sup>2</sup> Wordsworth's poetry reveals both the old and the new.

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<sup>1</sup>Wordsworth, The Poetical Works of Wordsworth, op. cit., p. 530.

<sup>2</sup>W. P. Jones, op. cit., p. 214.

As Jones notes in reference to both the seventeenth and eighteenth centuries, poets looked to the recent scientific revelations of order in every aspect of nature--from the revelations of the microscope to the revelations of the telescope--and found support for their belief in God and his orderly universe. Wordsworth continues the tradition of seeing wisdom and order revealed in nature. In the second book of The Prelude, he explains the difference in his reaction to the sun as a boy and as a man:

. . .a boy I loved the sun,  
 Not as I since have loved him, as a pledge  
 And surety of our earthly life, a light  
 Which we behold and feel we are alive;  
 Nor for his bounty to so many worlds--  
 But for this cause, that I had seen him lay  
 His beauty on the morning hills. . . .<sup>1</sup>

As a boy, Wordsworth appreciates only the beauty the sun imparts to the world, but as a man he appreciates the sun as an affirmation of life and necessary to the order of the world.

In his poem, "The Tables Turned," Wordsworth makes a very explicit statement on the virtues of nature as a teacher:

Books! 'tis a dull and endless strife:  
 Come, hear the woodland linnet,  
 How sweet his music! on my life,  
 There's more of wisdom in it.

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<sup>1</sup>Wordsworth, The Poetical Works of Wordsworth,  
op. cit., pp. 504-505.

And hark! how blithe the throstle sings!  
 He, too, is no mean preacher:  
 Come forth into the light of things,  
 Let nature be your teacher.

She has a world of ready wealth,  
 Our minds and hearts to bless--  
 Spontaneous wisdom breathed by health,  
 Truth breathed by cheerfulness.

One impulse from a vernal wood  
 May teach you more of man,  
 Of moral evil and of good,  
 Than all the sages can.<sup>1</sup>

Wordsworth clearly indicates in this poem the virtues of nature as a teacher. He, like poets before him in the seventeenth and eighteenth centuries, finds wisdom and order revealed in nature, but for Wordsworth the revelation comes most often through natural history.

Another expression of Wordsworth's understanding of nature and the lessons and pleasures to be derived from her, is found in "Michael":

Fields, where with cheerful spirits he had breathed  
 The common air; hills, which with vigorous step  
 He had so often climbed; which had impressed  
 So many incidents upon his mind  
 Of hardship, skill or courage, joy or fear;  
 Which, like a book, preserved the memory  
 Of the dumb animals, whom he had saved,  
 Had fed or sheltered, linking to such acts  
 The certainty of honorable gain;  
 Those fields, those hills--what could they less?--  
     had laid  
 Strong hold on his affections, were to him  
 A pleasurable feeling of blind love,  
 The pleasure which there is in life itself.<sup>2</sup>

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<sup>1</sup>Ibid., p. 377.

<sup>2</sup>Ibid., p. 105.

The hills are more than a backdrop. They are "like a book" and impress "so many incidents on his mind." In his study, English Romantic Poets, M. H. Abrams states that this was a common feat of the Romantics, "to read meanings into the landscape."<sup>1</sup> This is not a new idea, for beginning as early as the discoveries of Newton and the order revealed by the telescope, poets have used the happenings and content of nature to reveal God's wisdom. As Jones states, Keats and Wordsworth are hostile to science only on the surface "for their main theme is the physico-theological one of the wisdom of God in nature."<sup>2</sup> Jones adds that the Romantics are continuing the "themes of providence and the divine wisdom in nature which by this time [late eighteenth century] had already been rejected by the philosophers."<sup>3</sup>

Beach, too, feels that Wordsworth sees the wisdom of God revealed in nature. In his Concept of Nature, he states that Wordsworth is writing ". . . in the tradition of English poetry of the eighteenth century and English theology of the seventeenth and eighteenth centuries."<sup>4</sup> It is important to note that Beach considers Wordsworth's

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<sup>1</sup>Abrams, op. cit., p. 31.

<sup>2</sup>W. P. Jones, op. cit., p. 233.

<sup>3</sup>Ibid., p. 223.

<sup>4</sup>Beach, op. cit., p. 21.

imagery to be "steeped in eighteenth century natural theology," which he considers to be "the nursling of seventeenth and eighteenth century science."<sup>1</sup>

Wordsworth's poetry reveals the divine order in a number of ways. Literature of the early seventeenth century abounds with poetic references to Newton and the revelations of the telescope. This poetic tradition is carried on in the work of Wordsworth. Scientific-poetic imagery is scattered throughout his poetry and varies from admiring references to Newton in The Prelude to his comparison of Milton with a star in "London, 1802" to his careful description of the terrestrial bodies in "A Night-Piece" to his personification of the planets, Venus and Mars.

The poetry of Wordsworth also reflects the mid-eighteenth century preoccupation with the microscope and the microcosm. This is seen in the last lines of Wordsworth's "Ode: Intimations of Immortality from Recollections of Early Childhood," when he expresses his belief, "To me the meanest flower that blows can give/Thoughts that do often lie too deep for tears."<sup>2</sup> Just as the scientist finds much to study in a drop of pond water, so does the poet find much to contemplate in the simplest flower.

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<sup>1</sup>Ibid., p. 126.

<sup>2</sup>Wordsworth, The Poetical Works of Wordsworth, op. cit., p. 462.

The scientific imagery of all three periods of scientific pursuits meets in one little poem, as often happens in Wordsworth's poetry. In "She Dwelt Among the Untrodden Ways," images taken from the worlds revealed by the telescope, the microscope and natural history dovetail nicely:

She dwelt among the untrodden ways  
Beside the springs of Dove,  
A Maid who there were none to praise  
And very few to love:

A violet by a mossy stone  
Half hidden from the eye!  
- Fair as a star, when only one  
Is shining in the sky.

She lived unknown, and few could know  
When Lucy ceased to be;  
But she is in her grave, and, oh,  
The difference to me!<sup>1</sup>

Although Wordsworth does make reference to the revelation of God's wisdom and order through the imagery of the microscope and telescope, throughout his poetry he most often indicates that natural history reveals God's wisdom and order. The above lines clearly illustrate this belief.

W. P. Jones' contention that science could speak effectively only in the "gentler aspects of nature" and "the idea of divine wisdom and order observed in the natural history of rural England,"<sup>2</sup> seems easy enough to follow in

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<sup>1</sup>Ibid., p. 86.

<sup>2</sup>W. P. Jones, op. cit., p. 212.



the case of the poetry of William Wordsworth. References to the gentler aspects of nature and "sympathetic observation of English trees, flowers and birds"<sup>1</sup> abound in Wordsworth's poetry. However, most of the time Wordsworth is dealing with a subject that is within the realm of natural history, his emphasis is not on physical description, but his own feelings. For example, although he mentions flowers in "I Wandered Lonely as a Cloud," "To the Small Celandine," and "To the Same Flower," his description is not a purely physical one, but presents the feelings the flowers arouse in him. Most of his nature poetry follows this pattern.

However, Wordsworth was interested in nature and an interest in natural history was widespread. As mentioned earlier, amateur scientific pursuits shifted, and from 1760 to 1800 the amateur scientists were interested in natural history,<sup>2</sup> and magazines began to cater to this new taste.<sup>3</sup> It would be foolish to say Wordsworth, child observer and lover of nature, learned about nature through handbooks and magazines, but it would be equally foolish to say that these amateur scientists or natural history enthusiasts first learned and responded to nature through Wordsworth's poetry. It is conceivable that the interest in natural history manifest in magazines and handbooks, helped to prepare an

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<sup>1</sup>Ibid., p. 214.

<sup>2</sup>Ibid., p. 20.

<sup>3</sup>Ibid., pp. 18-19.

audience for Wordsworth and other nature poets. The journals of Wordsworth's own sister reveal the interest generated in and by the widespread information. For example, in the Crasmere Journal, 1800-1803, Dorothy observes,

(May, 16th), Friday morning. Warm and mild, after a fine night of rain. Transplanted radishes after breakfast, walked to Mr. Gell's with books, gathered mosses and plants. The woods extremely beautiful with all autumnal variety and softness. I carried a basket of mosses, and gathered some wild plants. Oh! that we had a book of botany. All flowers now are gay and deliciously sweet.<sup>1</sup>

Dorothy's intense expression of her desire to know more about the plants is not an unusual one. Two other examples from her journal, written at Alfexden in 1798, illustrate her constant interest:

January 22nd. Walked through the wood to Holford. The ivy twisting round the oaks like bristled serpents. The day cold--a warm shelter in the hollies, capriciously bearing berries. Query: Are the male and female flowers on separate trees?<sup>2</sup>

A month later another query is penned:

February 5th. Walked to Stowey with Coleridge, returned by Woodlands; a very warm day. In the continued singing of birds distinguished the notes of a blackbird or thrush. The sea over-shadowed by a thick dark mist, the land in sunshine. The sheltered oaks and beeches still retaining their brown leaves. Observed some trees putting out red shoots. Query: what trees are they?<sup>3</sup>

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<sup>1</sup>Ernest DeSelincourt (ed.), Journals of Dorothy Wordsworth (London: Macmillan and Company, Ltd., 1941), II, 38.

<sup>2</sup>Ibid., p. 3.

<sup>3</sup>Ibid., p. 7.

Perhaps the queries of others make them ready for the Romantic view of closely observed nature.

William Wordsworth, as well as his sister, is a close observer of nature, as his poems reveal. He is resolved to show the infinite variety of natural appearances other poets have missed.<sup>1</sup> In the text of his Guide to the Lakes, Wordsworth expresses his hope that his work will lead to more exact observation of nature.<sup>2</sup>

The results of Wordsworth's close observation appear in his writing. In his Guide he attempts to trace the landscape's appearance to "the most elementary geological forms and processes,"<sup>3</sup> for he wants to penetrate "beneath the surface appearances to the operations of nature that produced the admired visual beauty."<sup>4</sup> An example of this is Wordsworth's discussion of the shores of Cumberland and Westmoreland lakes:

Masses of rock, that have been precipitated from the heights into the areas of waters, lie in some places like stranded ships; or have acquired the compact structure of jutting piers; or project in little peninsulas crested with native wood. The smallest rivulet. . . will be found to have been not useless in shaping, by its deposits of gravel and soil in time of flood, a curve that would not otherwise

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<sup>1</sup>Ernest DeSelincourt, Early Wordsworth (Great Britain: The English Association, 1936), p. 13.

<sup>2</sup>John R. Nabholz, "Wordsworth's Guide to the Lakes and the Picturesque Tradition," Modern Philology, LXI (May, 1964), 288.

<sup>3</sup>Ibid., p. 291.

<sup>4</sup>Ibid., p. 289.

have existed. But the more powerful brooks, encroaching upon the level of the lake, have, in course of time, given birth to ample promontories of sweeping outlines. . . ; while their flat or gently-sloping surfaces never fail to introduce, into the midst of desolation and barrenness, the elements of fertility, even where the habitations of men may not have been raised.<sup>1</sup>

Wordsworth feels that a careful and thoughtful examination of the scientific processes that shaped the shores of the lakes enhances the beauty he observes. Beach suggests that "the pleasures the poet takes in the mere 'beauteous forms' of the outdoor world is reinforced by many assumptions drawn from his study and reflection on the 'order of nature conceived by scientists'. . . ." <sup>2</sup> Wordsworth realizes that the order of nature, for example, the smallest rivulet hurrying to a larger body of water, helps to shape the beauty of "a curve that would not otherwise have existed."

The results of Wordsworth's close observation of the landscape are rarely so formal or scientific in expression as in The Guide to the Lakes. Nevertheless, the results of his close scrutiny are often apparent in his poetry. The joyful account of "Nutting" reveals hazel boughs, clusters of hazel nuts, green stones "fleece with moss," and "a green and mossy bower."<sup>3</sup> Similar close observation leads

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<sup>1</sup>Ibid., p. 291.

<sup>2</sup>Beach, op. cit., p. 42.

<sup>3</sup>Wordsworth, The Poetical Works of Wordsworth, op. cit., p. 147.

to the careful description of Margaret's garden in the first book of The Excursion.<sup>1</sup>

Nature's animal kingdom is closely observed as well as the landscape. Just as "long lists of flowers and birds reflect the dominant scientific interests of the poets"<sup>2</sup> in the second half of the eighteenth century, birds and flowers also reflect Wordsworth's scientific interests. For example, in "An Evening Walk," Wordsworth offers a footnote to the lines, "Alike, when first the bittern's hollow bill/Was heard, or woodcocks, which in dark nights retire into the woods."<sup>3</sup> Wordsworth's habit of taking long walks and closely observing nature, eventually bears fruit in his poetry.

His interest in natural history is again noticeable in the same poem, when he describes a cock:

Sweetly ferocious, round his native walks,  
Pride of his sister-wives, the monarch stalks;  
Spur-clad his nervous feet, and firm his tread;  
A crest of purple tops the warrior's head.  
Bright sparks his black and rolling eyeball hurls  
Afar, his tail he closes and unfurls;  
On tiptoe reared, he strains his clarion throat,  
Threatened by faintly-answering farms remote:  
Again with his shrill voice the mountain rings,  
While, flapped with conscious pride, resound his  
wings!<sup>4</sup>

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<sup>1</sup>Ibid., p. 599.      <sup>2</sup>W. P. Jones, op. cit., p. 182.

<sup>3</sup>Wordsworth, The Poetical Works of Wordsworth, op. cit., p. 2.

<sup>4</sup>Ibid., p. 4.

In case the reader doubts the accuracy of his observation, Wordsworth suggests an alternate source of information concerning the woodcock. He refers the reader to the "description of an appearance of this kind in Clark's Survey of the Lakes, accompanied by vouchers of its veracity, that may amuse the reader."<sup>1</sup>

Even more detailed is the picture of the swan and her nest presented by Wordsworth.

The swan uplifts his chest and backward flings  
His neck, a varying arch, between his towering wings:  
The eye that marks the gliding creature sees  
How graceful, pride can be, and how majestic, ease.  
While tender cares and mild domestic loves  
With furtive watch pursue her as she moves,  
The female with a meeker charm succeeds,  
And her brown little-ones around her leads,  
Niobling the water lilies as they pass,  
Or playing wanton with the floating grass.  
She, in a mother's care, her beauty's pride  
Forgetting, calls the wearied to her side:  
Alternately they mount her back, and rest  
Close by her mantling wings' embraces prest.

Long may they float upon this flood serene;  
Theirs be these holms untrodden, still, and green,  
Where leafy shades fence off the blustering gale,  
And breathes in peace the lily of the vale!  
Yon isle, which feels not even the milkmaid's feet,  
Yet hear her song, ' by distance made more sweet,  
Green water-rushes overspread the floor;  
Long grass and willows form the woven wall,  
And swings above the roof the poplar tall.  
Thence issuing often with unwieldy talk,  
They crush with broad black feet their flowery walk;

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<sup>1</sup>Ibid.

Or, from the neighbouring water, hear at morn  
 The hound, the horse's tread, and mellow horn;  
 Involve their serpent-necks in changeful rings,  
 Rolled wantonly between their slippery wings,  
 Or, starting up with noise and rude delight,  
 Force half upon the wave their cumbrous flight.<sup>1</sup>

In this passage Wordsworth directs his attention to the details of the swans' appearance and their eating and nesting habits. For example, he carefully notes such details as the nest with a floor of "green water-rushes" and woven willow walls. Wordsworth, like earlier poets, carefully and with almost scientific accuracy recorded the world around him.

Wordsworth is not only a close, but also an impartial observer of nature. He recognizes and records both the pleasant and unpleasant in nature. In the sixth book of The Prelude, Wordsworth recalls that he and his companion

Were lost, bewildered among woods immense,  
 And on a rock sate down, to wait for day.  
 An open place it was, and overlooked,  
 From high, the sullen water far beneath,  
 On which a dull red image of the moon  
 Lay bedded, changing oftentimes its form  
 Like an uneasy snake. From hour to hour  
 We sate and sate, wondering as if the night  
 Had been ensnared by witchcraft. On the rock  
 At last we stretched our weary limbs for sleep,  
 But could not sleep, tormented by the stings  
 Of insects, which with noise like that of noon  
 Filled all the woods; the cry of unknown birds;  
 The blackness visible, than any outward light:  
 The breathless wilderness of clouds; the clock  
 That told, with unintelligible voice,  
 The widely parted hours: the noise of streams,

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<sup>1</sup>Ibid., p. 5.

And sometimes rustling motions nigh at hand,  
 That did not leave us free from personal fear;  
 And, lastly, the withdrawing moon, that set  
 Before us, while she still was high in heaven;--  
 These were our food; and such a summer's night  
 Followed that pair of golden days that shed  
 On Como's lake, and all that round it lay,  
 Their fairest, softest, happiest influence.<sup>1</sup>

Wordsworth's descriptions--immense woods, sullen water, dull red image of the moon (strikingly compared to a snake), rocks for a bed, no sleep, stinging insects, noise-filled woods, and strange sounds and cries--are not of picture-pretty nature at her loveliest. Perhaps it is such descriptions of the unpleasant in nature that lead Beach to conclude that Wordsworth's descriptions of nature are more realistic than the scientific Shelley's descriptions.<sup>2</sup>

In addition to Wordsworth's attitude toward and use of the sciences, his use of psychology reveals his interest in science. Hoxie Neale Fairchild finds in both "Three Years She Grew" and "Tintern Abbey" signs of Wordsworth's debt to Locke and Hartley and disagrees with Arthur Beatty, "who first showed the full extent of Wordsworth's debt to eighteenth century psychology," only to the extent that he feels Beatty over-emphasizes Wordsworth's debt.<sup>3</sup>

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<sup>1</sup>Ibid., p. 537.

<sup>2</sup>Beach, op. cit., p. 210.

<sup>3</sup>Fairchild, The Romantic Quest, p. 105.



Wordsworth is interested in both normal and abnormal psychology. He likes to contemplate the way the human mind works. For example, in his "Ode: Intimations of Immortality from Recollections of Early Childhood," Wordsworth describes the "six years' darling of a pigmy size" by saying,

See, where 'mid work of his own hand he lies,  
 Fretted by sallies of his mother's kisses,  
 With light upon him from his father's eyes!  
 See, at his feet, some little plan or chart,  
 Some fragment from his dream of human life,  
 Shaped by himself with newly-learned art;  
     A wedding or a festival,  
     A mourning or a funeral;  
     And this hath now his heart,  
 And unto this he frames his song:  
     Then will be his tongue  
 To dialogues of business, love, and strife;  
     But it will not be long  
     Ere this be thrown aside,  
     And with new joy and pride  
 The little Actor cons another part;  
 Filling from time to time his "humorous stage"  
 With all the persons, down to palsied age,  
 That Life brings with her in her equipage;  
     As if his whole vocation  
     Were endless imitation.<sup>1</sup>

Not only does Wordsworth present a delightful and accurate picture of the antics of a six-year-old child, but he also presents an accurate picture of the way a child learns by perception and imitation. Wordsworth insists that man comes to "divine vision through perception."<sup>2</sup>

Wordsworth also understands the psychology of mental health, as illustrated in "I Wandered Lonely as a Cloud"

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<sup>1</sup>Wordsworth, The Poetical Works of Wordsworth,  
op. cit., p. 461.

<sup>2</sup>W. P. Jones, op. cit., p. 226.

and "To Sleep." In the former, he points out the healing power of a fond memory,

For oft, when on my couch I lie  
In vacant or in pensive mood,  
They flash upon that inward eye  
Which is the bliss of solitude;  
And then my heart with pleasure fills,  
And dances with the daffodils.<sup>1</sup>

This reflection on happy or serene moments contributes to the growth of his mind. Sleep, too, is important to Wordsworth for, as he longs for the sleep he has not had for three nights, he states that

Without thee what is all the morning's wealth?  
Come, blessed barrier between day and day,  
Dear mother of fresh thoughts and joyous health!<sup>2</sup>

Sleep is important for a healthy and creative mind.

In addition to analyzing such basic functions of the mind, Wordsworth is able to objectively contemplate the workings of his own mind. The most impressive example of this ability is The Prelude. He grants

But who shall parcel out  
His intellect by geometric rules,  
Split like a province into round and square?  
Who knows the individual hour in which  
His habits were first sown, even as a seed?  
Who that shall point as with a wand and say  
"This portion of the river of my mind  
Came from yon fountain?"<sup>3</sup>

Realizing this limitation, Wordsworth does give an accurate picture of the growth of the mind--a poet's mind. In both

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<sup>1</sup>Wordsworth, The Poetical Works of Wordsworth,  
op. cit., p. 149.

<sup>2</sup>Ibid., p. 202.

<sup>3</sup>Ibid., p. 505.

The Prelude and the "Ode," Wordsworth shows the mind growing through experiences and reflections. In relating this concept directly to Locke, M. H. Abrams says that Wordsworth shows "how the mind develops through sense experiences and reflection--John Locke's two great 'fountains' of empirical knowledge."<sup>1</sup>

While Wordsworth is certainly indebted to the eighteenth century psychologists, he does not accept their ideas at face value, any more than he does the physical sciences. For example, sensationalism, as taught in the eighteenth century, merely gives man a rather passive role. Wordsworth's rendition of sensationalism, as it appears in his poetry, is quite different. In "Lines Composed a Few Miles Above Tintern Abbey," Wordsworth delineates man's role in nature:

Therefore am I still  
A lover of the meadows and the woods,  
And mountains; and of all that we behold  
From this green earth; of all the mighty world  
Of eye, and ear,--both what they half create,  
And what perceive; well pleased to recognise  
In nature and the language of the sense  
The anchor of my purest thoughts, the nurse,  
The guide, the guardian of my heart, and soul  
Of all my moral being.<sup>2</sup>

Man has an active, not a passive role. He half-creates; half-perceives. Fairchild feels that, according to Wordsworth,

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<sup>1</sup>Abrams, op. cit., p. 103.

<sup>2</sup>Wordsworth, The Poetical Works of Wordsworth, op. cit., pp. 164-165.

the influence of nature depends upon us as well as upon nature. . . unless we go to her prepared to find what she has to give us, we shall not find it. . . . There is love for us in nature, but unless we have love for her in us the process is not complete. Satisfying contact with God in nature demands an exercise of the creative or poetic imagination. . . .<sup>1</sup>

Basil Willey agrees with this interpretation of Wordsworth's sensationalism. He describes the poet's concept as "a belief in the capacity of the mind to cooperate with this 'active universe,' to contribute something of its own to it in perceiving it, and not, as sensationalism taught, merely to receive, passively, impressions from without."<sup>2</sup> As in reference to the physical sciences in general, Wordsworth accepted some and rejected other ideas advanced by the psychologists.

Science also found its way into the poetry of the eighteenth century by way of travel literature. Travel literature is filled with scientific descriptions of the exotic, whether it is plants, animals or topography. The traveler Wordsworth carefully describes his journey to and through the Alps in the fourth book of The Prelude. He describes not only his reactions and feelings, but also the physical beauty and splendor he sees. The influence of travel literature is also evident in Wordsworth's use of animals not indigenous to England. For example, in

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<sup>1</sup> Fairchild, The Romantic Quest, p. 106.

<sup>2</sup> Abrams, op. cit., pp. 86-87.

"Resolution and Independence" he describes a sea-beast not native to his beloved hills in the line, "Like a sea-beast crawled forth, that on a shelf/Of rock or sand reposeth, there to sun itself."<sup>1</sup> His "Song of the Wandering Jew" offers two other examples of the unusual:

What if through the frozen center  
Of the Alps the Chamois bound,  
Yet he has a home to enter  
In some nook of chosen ground:  
And the Sea-horse, though the ocean  
Yield him no domestic cave,  
Slumbers without sense of motion,  
Couched upon the rocking wave.<sup>2</sup>

Another unusual creature appears later in the same poem:

The fleet Ostrich, till day closes,  
Vagrant over desert sands,  
Brooding on her eggs reposes  
When chill night that care demands.<sup>3</sup>

Again the description of the unusual is found in Wordsworth's poetry. His familiarity with Shelborne's Voyage and the works of Gilbert White and William Bartram offers possible sources of knowledge: but, regardless of his sources of knowledge, through travel literature scientific information filters into Wordsworth's mind and poetic imagination in still another way.

Whether reading travel literature or walking through the woods, Wordsworth is receptive to scientific knowledge.

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<sup>1</sup>Wordsworth, The Poetical Works of Wordsworth, op. cit., p. 156.

<sup>2</sup>Ibid., p. 131.

<sup>3</sup>Ibid., p. 132.

Those who describe Wordsworth as being antagonistic toward science, might find themselves as objects of Wordsworth's contempt for they are multiplying the distinctions and ignoring Wordsworth's kinship with seventeenth and eighteenth century poets in their use of science. Specifically, he recognizes and expounds the limitations of science. Like many poets before him, Wordsworth does find some aspects of science to use in his poetry. For example, images taken from natural history fill his poetry, and information taken from psychologists and travelers of his own day is evident in his poetry. And, as many before him, Wordsworth is aware of science as one way to illustrate the wisdom of God.

## CHAPTER IV

### COLERIDGE: PHILOSOPHER, POET, AMATEUR SCIENTIST

For Samuel Taylor Coleridge, a philosopher "compelled to search for a single-minded purity of doctrine,"<sup>1</sup> science is essential. An examination of Coleridge's attitude toward and use of science begins with Coleridge the philosopher. In Biographia Literaria Coleridge states that "no man was ever yet a great poet, without being at the same time a profound philosopher."<sup>2</sup> The philosophy of the poet cannot be separated from his work as it permeates his attitude toward life, his very way of looking at things, and Coleridge's philosophy incorporates his interest in and knowledge of science.

The importance of science to the philosopher Coleridge is described by Bate, who feels that Coleridge keeps returning to "the fundamental question of the relationship between God and the created universe."<sup>3</sup> Bate

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<sup>1</sup>Walter Jackson Bate, Coleridge (New York: The Macmillan Company, 1968), p. 2.

<sup>2</sup>Samuel Taylor Coleridge, Biographia Literaria (London: William Pickering, 1847), II, 23.

<sup>3</sup>Bate, op. cit., p. 214.

lists four points that were vital to Coleridge's understanding of this relationship. The fourth point, "the autonomy of science," expresses Coleridge's interest in science for he "felt from the beginning that any theology must preserve the possibility of free scientific explanation of nature. There could be no conflict of religion and science."<sup>1</sup> Science then is a part of the most basic aspect of Coleridge's philosophy because his quest is for "unity of interpretation, unity of feeling, unity of relationship of every sort, but with no sacrifice of the claims of diversity."<sup>2</sup>

Throughout his life, Coleridge wanted to write his magnum opus. In his fifties he did write the Opus Maximum. Bate feels that the differences between the two represent a shift in Coleridge's thought after 1820, and he perceives as the difference "that the magnum opus represented the hope of a synthesis of arts, sciences, philosophy, through religion; and that in the Opus Maximum the concern is more concentrated."<sup>3</sup> But even with this slight shift, science still constitutes an important part of Coleridge's concern. As late as the spring of 1833, this concern is described as

the search for a philosophical means by which the mystery of creation (and this would include the why and the how) could be penetrated in such a way as to answer simultaneously the claims of (1) traditional Christian theology; (2) modern epistemology and logic;

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<sup>1</sup>Ibid.

<sup>2</sup>Ibid., p. 31.

<sup>3</sup>Ibid., p. 212.



and (3) the "dynamic philosophy," with its majestic and--within its theological limits--successful inclusion of the discoveries of science and philosophy.<sup>1</sup>

The reconciliation of these three separate strands of thought requires that Coleridge must be knowledgeable in these areas. He must be concerned with scientific endeavors for example. Conversely, everything he learns about science enlarges the scope of his magnum opus or Opus Maximum and often later affects his poetry.

Coleridge's interest in scientific learning is directly expressed in his poetry. In the first two stanzas of "Quae Nocent Docent," in 1789, Coleridge laments,

Oh! might my ill-past hours return again!  
No more, as then, should Sloth around me throw  
Her soul-enslaving, leaden chain!  
No more the precious time would I employ  
In giddy revels, or in thoughtless joy,  
A present joy producing future woe.

But o'er the midnight Lamp I'd love to pore,  
I'd seek with care fair Learning's depths to sound,  
And gather scientific Lore:  
Or to mature the embryo thoughts inclin'd,  
That half-conceiv'd lay struggling in my mind,  
The cloisters' solitary gloom I'd round.<sup>2</sup>

If he could relive his "ill-past hours," Coleridge says he would carefully seek the deepest learning, particularly science, or the maturation of some of his own thoughts.

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<sup>1</sup>Ibid., p. 233.

<sup>2</sup>Samuel Taylor Coleridge, The Poems of Samuel Taylor Coleridge, ed. Ernest Hartley Coleridge (London: Oxford University Press, 1967), pp. 7-8.

Later, in "On Reflections on Having Left a Place of Retirement," he says,

I therefore go, and join head, heart, and hand,  
Active and firm, to fight the bloodless fight  
Of Science, Freedom, and the Truth in Christ.<sup>1</sup>

Coleridge indicates his esteem for science by linking it with "Freedom and the Truth in Christ." He again links science and freedom in "Religious Musings" when he says,

From Avarice thus, from Luxury and War  
Sprang heavenly Science; and from Science Freedom.  
O'er waken'd realms Philosophers and Bards  
Spread in concentric circles: they whose souls,  
Conscious of their high dignities from God,  
Brook not Wealth's rivalry! and they, who long  
Enamoured with the charms of order, hate  
The unseemly disproportion: and whoe'er  
Turn with mild sorrow from the Victor's car  
And the low puppetry of thrones, to muse  
On that blest triumph, when the Patriot Sage  
Called the red lightnings from the o'er-rushing cloud  
And dashed the beauteous terrors on the earth  
Smiling majestic.<sup>2</sup>

Coleridge feels that freedom sprang from "heavenly Science," for science awakened the philosophers and poets and also provided indications of order in the world necessary for those who hate "unseemingly disproportion."

As another indication of Coleridge's feeling for science, Bate suggests that Coleridge is not "completely joking" in his letter to Joseph Cottle in April of 1797:

I should not think of devoting less than 20 years  
to an Epic Poem. Ten to collect materials and to  
warm my mind with universal science. I would thoroughly

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<sup>1</sup>Ibid., p. 108.

<sup>2</sup>Ibid., pp. 117-118.

know Mechanics, Hydrostatics, Optics, and Astronomy, Medicine--then the mind of man--then the minds of men--in all Travels, Voyages and Histories. So I would spend ten years--the next five to the composition of the poem--and the five last to the correction of it.<sup>1</sup>

Although this is probably an exaggeration, it does suggest his zeal for all knowledge with science as an important component.

Coleridge is attracted by knowledge because he is interested in the forces that make life meaningful. Through his perusal of philosophical studies and scientific reports, he seeks some way to reconcile science and Christianity, and these attempts are apparent in many facets of his poetry. Just as seventeenth and eighteenth century poets had felt that God's wisdom was to be found in the order of nature revealed by science, Coleridge, too, often recounts his observations of this revelation. As he looks at nature in "The Eolian Harp," he sees God in everything and wonders,

And what if all of animated nature  
Be but organic Harps diversely fram'd,  
That tremble into thought, as o'er them sweeps  
Plastic and vast, one intellectual breeze  
At once the Soul of each, and God of all?<sup>2</sup>

Again, in "This Lime-Tree Bower My Prison," Coleridge hopes his friend will share a similar experience:

Struck with deep joy may stand, as I have stood,  
Silent with swimming sense: yea, gazing round  
On the wide landscape, gaze till all doth seem

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<sup>1</sup>Bate, op. cit., p. 46.

<sup>2</sup>Coleridge, The Poems of Samuel Taylor Coleridge, op. cit., p. 102.

Less gross than bodily; and of such hues  
 As veil the Almighty Spirit, when yet he makes  
 Spirits perceive his presence.<sup>1</sup>

Coleridge is struck with a deep joy as he sees the Almighty Spirit revealed in nature, and he knows that his friend Charles Lamb will be charmed by these sights and sounds for to Charles "No sound is dissonant which tells of life."<sup>2</sup> Nature reveals God.

Coleridge again notes the religious meanings to be gleaned from nature as he expresses his "Fears in Solitude." He says,

Here he might lie on fern or withered heath,  
 While from the singing lark (that sings unseen  
 The minstrelsy that solitude loves best),  
 And from the sun, and from the breezy air,  
 Sweet influences trembled o'er his frame;  
 And he, with many feelings, many thoughts,  
 Made up a meditative joy, and found  
 Religious meanings in the forms of Nature!<sup>3</sup>

The poet makes direct reference to the meditative joy and religious meanings to be found in the forms of Nature.

Later in the poem, Coleridge celebrates Britain and explicates the reason for his love:

O native Britain! O my Mother Isle!  
 How shouldst thou prove aught else but dear and holy  
 To me, who from thy lakes and mountain-hills,  
 Thy clouds, thy quiet dales, thy rocks and seas,  
 Have drunk in all my intellectual life,  
 All sweet sensations, all ennobling thoughts,  
 All adoration of the God in nature,

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<sup>1</sup>Ibid., p. 180.

<sup>2</sup>Ibid., p. 181.

<sup>3</sup>Ibid., p. 257.

All lovely and all honourable things,  
 Whatever makes this mortal spirit feel  
 The joy and greatness of its future being?  
 There lives no form nor feeling in my soul  
 Unborrowed from my country!<sup>1</sup>

Even his love of country is based on the fact that God's wisdom and order is revealed in the countryside.

God's wisdom and presence is felt not only in England, but everywhere. Coleridge, in his "Lines Written in the Album at Elbingerode, in the Hartz Forest," promises not to profane

That man's sublimer spirit, who can feel  
 That God is everywhere! the God who framed  
 Mankind to be one mighty family,  
 Himself our Father, and the World our Home.<sup>2</sup>

This Father teaches his children through an eternal language Coleridge describes in "Frost at Midnight,"

. . .so shalt thou see and hear  
 The lovely shapes and sounds intelligible  
 Of that eternal language, which thy God  
 Utters, who from eternity doth teach  
 Himself in all, and all things in himself.  
 Great universal Teacher! he shall mould  
 Thy spirit, and by giving make it ask.<sup>3</sup>

The "Great universal Teacher" reveals his wisdom in all things, particularly nature.

In addition to his belief that the wisdom of God is revealed through the order science had emphasized in nature, the poetry of Samuel Taylor Coleridge reveals his interest

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<sup>1</sup>Ibid., p. 262.

<sup>2</sup>Ibid., p. 316.

<sup>3</sup>Ibid., p. 242.

in almost every branch of science. Like many poets before him, he is something of an amateur scientist who chooses to use his scientific knowledge in his poetry.

One such use of scientific knowledge indicates Coleridge's affinity with poets of the preceding centuries. In the seventeenth and eighteenth centuries many poets were delighted with the discoveries made through use of the telescope and microscope, and their poetry reveals the interest in these two instruments. Coleridge, too, adopts the scientific imagery of the preceding centuries. The telescope and its revelations lead to Coleridge's simile in "Sonnet to the Autumnal Moon." He says the moon sails "like a meteor kindling in its flight."<sup>1</sup> He refers again to meteors in "The Nose" as "fire-clad meteors"<sup>2</sup> and in "Honour" when he asks "What are thou but a Meteor's glaring light?"<sup>3</sup> He also refers in "The Nose" to "Comets, when most they drink the solar flame."<sup>4</sup>

When scientists discovered the microscope, it, too, had an effect on poetry. In contrast to the vast worlds discovered by use of the telescope, the microscope revealed worlds within worlds. These miniature worlds affect Coleridge's poetry, just as they had that of earlier poets. For example, in "Reflections on Having Left a Place of

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<sup>1</sup>Ibid., p. 5.

<sup>2</sup>Ibid., p. 9.

<sup>3</sup>Ibid., p. 25.

<sup>4</sup>Ibid., p. 8.

Retirement," Coleridge describes the microcosm he sees before him:

But the time, when first  
 From that low Dell, steep up the stony Mount  
 I climb'd with perilous toil and reach'd the top,  
 Oh! what a goodly scene! Here the bleak mount,  
 The bare bleak mountain speckled thin with sheep;  
 Grey clouds, that shadowing spot the sunny fields;  
 And river, now with bushy rocks o'er-brow'd,  
 Now winding bright and full, with naked banks;  
 And seats, and lawns, the Abbey and the wood,  
 And cots, and hamlets, and faint city-spire;  
 The Channel there, the Islands and white sails,  
 Dim coasts, and cloud-like hills, and shoreless Ocean--  
 It seem'd like Omnipresence! God, methought,  
 Had built him there a Temple: the whole World  
 Seem'd imag'd in its vast circumference:  
 No wish profan'd my overwhelmed heart.  
 Blest hour! It was a luxury,--to be!<sup>1</sup>

Just as the scientists find a miniature world in a drop of pond water, Coleridge finds the whole world in the scene before him. Coleridge again views a miniature world in "This Lime-Tree Bower My Prison,"

. . .Henceforth I shall know  
 That Nature ne'er deserts the wise and pure:  
 No plot so narrow, be but Nature there,  
 No waste so vacant, but may well employ  
 Each faculty of sense and keep the heart  
 Awake to Love and Beauty!<sup>2</sup>

and realizes the lessons to be learned from such a narrow plot.

Coleridge is also influenced by the scientific discoveries of his own period. For example, his fascination with travel journals and geography is quite apparent. These journals are often very technical and filled with

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<sup>1</sup>Ibid., p. 107.

<sup>2</sup>Ibid., p. 131.

scientific terms and information. At various times throughout his discussion, Lowes calls attention to the ways Coleridge is influenced by geographers and travelers of the day; for example, Coleridge's interest in the work of Major Jones Rennell, a distinguished geographer of the day, is noted.<sup>1</sup> Lowes also investigates the varied sources Coleridge sought for knowledge of crocodiles.<sup>2</sup>

Another example of Coleridge's interest in travel literature is in "The Delinquent Traveller" where he makes reference to the brave Captain Lyon. Evidently, Coleridge had read and enjoyed Lyon's The Private Journal of Captain G. F. Lyon of the Mr. Hecla, during the recent voyage of discovery under Captain Parry.<sup>3</sup> Coleridge purchased a copy of Bartram's Travels in South Carolina in 1818, and his little poem, "Homeless," is inscribed on the fly-leaf of this book.<sup>4</sup> These are only a few indications of Coleridge's interest in the travel literature of the day.

As Coleridge reads, an interesting phenomenon occurs. Lowes describes this process as follows:

We have to do, in a word, with one of the most extraordinary memories of which there is record, stored

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<sup>1</sup>Lowes, op. cit., p. 31.

<sup>2</sup>Ibid., pp. 408-409.

<sup>3</sup>Coleridge, The Poems of Samuel Taylor Coleridge, op. cit., p. 444.

<sup>4</sup>Ibid., p. 460.



with the spoils of an omnivorous reading, and endowed into the bargain with an almost uncanny power of association. And that will be well to keep in mind.<sup>1</sup>

Bits and pieces of scientific information, theories, experiments and observations accumulate in his memory as he reads, later to be released in some previously unthought-of poetical expression. Of everything learned, nothing is irrelevant to the creative imagination. Coleridge's poetic works reveal the influence of this stockpile of geographic studies, natural history notes, and scientific experiments.

Coleridge's poetry often reflects scientific information gleaned from this reading of travel literature. For example, he reads, in M. de Maupertius' book on "the Figure of the Earth," about the "scientific expedition sent to Finland by the king of France to measure an arc of the meridian which cuts the polar circle"<sup>2</sup> and later says in the first stanza of "To William Godwin,"

O Form'd t' illume a sunless world forlorn,  
As o'er the chill and dusky brow of Night,  
In Finland's wintry skies the Mimic Morn  
Electric pours a stream of rosy light.<sup>3</sup>

These lines lead to Lowe's conclusion that Maupertius "blossomed into poetry."<sup>4</sup>

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<sup>1</sup>Lowe, op. cit., p. 40.      <sup>2</sup>Ibid., p. 34.

<sup>3</sup>Coleridge, The Poems of Samuel Taylor Coleridge, op. cit., p. 86.

<sup>4</sup>Lowe, loc. cit.

Some of the reflections of Coleridge's reading are rather obvious. For example, the lines "Like a cloud that travels on,/Steamed up from Cairo's swamps of pestilence,"<sup>1</sup> in "Fears of Solitude," obviously reflect some interest in geography, as do the lines describing the South pole in "The Rime of the Ancient Mariner,"

And southward aye we fled.

And now there came both mist and snow,  
And it grew wondrous cold:  
And ice, mast-high, came floating by,  
As green as emerald,

And through the drifts the snowy clifts  
Did send a dismal sheen:  
Nor shapes of men nor beasts we ken--  
The ice was all between.

The ice was here, the ice was there,  
The ice was all around:  
It cracked and growled, and roared and howled,  
Like noises in a swound!

At length did cross an Albatross,  
Thorough the fog it came;  
As if it had been a Christian soul,  
We hailed it in God's name.<sup>2</sup>

The fascination with the wonders of the polar regions is very apparent. Lowes suggests it is not, however, material researched specifically for inclusion in this poem. Instead, Lowes states that

The sides of the North had for years drawn Coleridge's fancy, as the needle is set towards the pole. The great stanzas in "The Rime of the

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<sup>1</sup>Coleridge, The Poems of Samuel Taylor Coleridge, op. cit., p. 258.

<sup>2</sup>Ibid., pp. 188-189.

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Ancient Mariner" which depict the terrors of the polar ice were not put together from material got up for the occasion. There had been, on the contrary, a long, slow charging of the cells before the final release of creative energy.<sup>1</sup>

Although the effect of his interest in travel literature and geography is often apparent, there are other times when a poetic detective is necessary to discover the sources influencing Coleridge's poetry. The simile, "like April hoar-frost spread," in "The Rime of the Ancient Mariner," has added significance for detective Lowes, for his careful scrutiny reveals something more complicated than a comparison of frost and moonlight:

Let us, for a moment, retrace our steps. What do we know to have been stirring in Coleridge's mind when the triad of stanzas to which this frost-like moonlit sea belongs, was born? We know, for one thing, that the ubiquitous red and blue and green of Captain Cook's protozoa were singularly active. And we know, too, that Father Bourges's account of his phosphorescent fishes and his rainbow in the spray was there, and that, with the last, Frederick Marten's sea-bow in the shadow of the sail had coalesced. And Marten's account of his sea-bow collary of his description of the needles of the frost.<sup>2</sup>

Either way, obvious or obscure, scientific information gleaned from the travel literature of the period definitely affects Coleridge's poetry.

One last example provides additional proof of Coleridge's interest in travel literature. In "This

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<sup>1</sup>Lowes, op. cit., p. 86.

<sup>2</sup>Ibid., p. 187.

Lime-Tree Bower My Prison," Coleridge describes the rooks flying overhead:

. . .when the last rook  
Beat its straight path along the dusky air  
Homewards, I blest it! deeming its black wing  
(Now a dim speck, now vanishing in light)  
Had cross'd the mighty Orb's dilated glory,  
While thou stood'st gazing; or, when all was still,  
Flew creaking o'er thy head and had a charm  
For thee, my gentle-hearted Charles, to whom  
No sound is dissonant which tells of Life.<sup>1</sup>

In his footnote to these lines, Coleridge says,

Some months after I had written this line, it gave me pleasure to find. . .that Bartram had observed the same circumstance of the Savanna Crane. 'When these Birds move their wings in flight, their strokes are slow, moderate and regular; and even when at a considerable distance or high above us, we plainly hear the quill-feathers: their shafts and webs upon one another creek as the joints or working of a vessel in a tempestuous sea.'<sup>2</sup>

Coleridge is pleased to find that Bartram verifies his own observations.

Scientific information reaches Coleridge in other ways. One of these is the study of natural history. This interest is revealed in his poetry in varying degrees. At times he merely refers to or describes the realm of natural history. In other instances, primarily in footnotes to his poetry, Coleridge reflects the technical, scientific language of natural history. For example, he describes a

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<sup>1</sup>Coleridge, The Poems of Samuel Taylor Coleridge, op. cit., p. 181.

<sup>2</sup>Ibid.

serpent twined about a "Behemoth" and feels compelled to add a footnote saying that "Behemoth, in Hebrew, signifies wild beasts in general. Some believe it is the Elephant, some the Hippopotamus; some affirm it is the Wild Bull. Poetically, it designates any large Quadruped."<sup>1</sup> In the poem, Coleridge chooses a Hebrew word, but in the footnote he feels compelled to use the scientific designation, quadruped.

Another inkling of Coleridge's interest in natural history is gleaned from an earlier version of "This Lime-Tree Bower My Prison" sent by Coleridge to Southey in July of 1797. This earlier version includes the lines: "Whose plummy ferns forever nod and drip/Spray'd by the waterfall."<sup>2</sup> Coleridge proceeds to inform Southey that these are "ferns that grow in most places five or six together, and form a complete 'Prince of Wales' Feather'--that is plummy."<sup>3</sup>

This concern with scientific accuracy is also apparent in "The Keepsake." The poet describes "Hope's gentle gem, the sweet Forget-me-not."<sup>4</sup> However, in his footnote the scientist indicates that "Forget-me-not" is

One of the names (and meriting to be the only one) of the Myosotis Scorpioides Palustris, a flower from six to twelve inches high, with blue blossom and bright

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<sup>1</sup>Ibid., p. 119.

<sup>2</sup>Ibid., p. 178.

<sup>3</sup>Ibid.

<sup>4</sup>Ibid., p. 346.

yellow eye. It has the same name over the whole Empire of Germany (Vergissmeinnicht) and, we believe, in Denmark and Sweden.<sup>1</sup>

Such footnotes reveal Coleridge's interest in scientific accuracy in his poetry.

Natural history again affects Coleridge's poetry in "Hymn Before Sun-Rise, in the Vale of Chamouni." When the poem was first published in the Morning Post and the Poetical Register, it was preceded by an explanatory note by Coleridge. As a part of the introduction, Coleridge says that

The beautiful Geniana major, or greater gentian, with blossoms of the brightest blue, grows in large companies a few steps from the never-melted ice of the glaciers. I thought it an affecting emblem of the boldness of human hope, venturing near, and, as it were, leaning over the brink of the grave. Indeed, the whole vale, its every light, its every sound, must needs impress every mind not utterly callous with the thought--Who would be, who could be an Atheist in this valley of wonders!<sup>2</sup>

Coleridge displays his interest not only in the beauty of the flower and its affect, the revelation of God's wisdom, but also natural history by his use of the scientific term, geniana major. He again insists on the scientific name of the flower in his footnote to the line, "Who, with living flowers of lowliest blue. . . ."<sup>3</sup>

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<sup>1</sup>Ibid.

<sup>2</sup>Ibid., p. 377.

<sup>3</sup>Ibid., p. 379.

The above examples reflect Coleridge's concern for correct scientific terms, but his interest in natural history included experiments as well as terminology. In "Lines Written at Shurton Bars, Near Bridgewater," Coleridge states,

'Tis said, in Summer's evening hour  
Flashes the golden-colour'd flower  
A fair electric flame.<sup>1</sup>

The first two times the poem was published, it appeared with the following footnote:

<sup>1</sup>LIGHT from plants. In Sweden a very curious phenomenon has been observed on certain flowers, by M. Haggern, lecturer in natural history. One evening he perceived a faint flash of light repeatedly dart from a marigold. Surprised at such an uncommon appearance, he resolved to examine it with attention; and, to be assured it was no deception of the eye, he placed a man near him, with orders to make a signal at the moment when he observed the light. They both saw it constantly at the same moment.

The light was most brilliant on marigolds of an orange or flame colour; but scarcely visible on pale ones. The flash was frequently seen on the same flower two or three times in quick succession; but more commonly at intervals of several minutes; and when several flowers in the same place emitted their light together, it could be observed at a considerable distance.

This phenomenon was remarked in the months of July and August at sunset, and for half an hour when the atmosphere was clear; but after a rainy day, or when the air was loaded with vapours nothing of it was seen.<sup>2</sup>

Coleridge concludes the footnote with a list of the flowers emitting flashes and the comment that "from the rapidity

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<sup>1</sup>Ibid., p. 99.

<sup>2</sup>Ibid., pp. 99-100.

of the flash, and other circumstances, it may be conjectured that there is something of electricity in this phenomenon."<sup>1</sup> For whatever reasons Coleridge chose to discontinue the publication of the note, its initial presence indicates his interest in the question of the relationship between plants and animals that was a source of constant speculation for eighteenth century biologists.<sup>2</sup>

Coleridge's interest in other branches of science can also be seen in his poetry. For example, his description of himself as a chemist ("Of useful knowledge, I am a so-so chemist & I love chemistry")<sup>3</sup> and his long acknowledged friendship with Sir Humphry Davy most certainly seem to have influenced his poem, "Kisses":

Cupid, if storying Legends tell ariight,  
Once fram'd a rich Elixir of Delight.  
A Chalice o'er love-kindled flames he fix'd,  
And in it Nectar and Ambrosia mix'd:  
With these the magic dewes which Evening brings,  
Brush'd from the Idalian star by faery wings:  
Each tender pledge of sacred Faith he join'd,  
Each gentler Pleasure of th' unspotted mind--  
Day-dreams, whose tints with sportive brightness glow,  
And Hope, the blameless parasite of Woe.  
The eyeless Chemist heard the process rise,  
The steamy Chalice bubbled up in sighs;  
Sweet sounds transpired, as when the enamour'd Dove  
Pours the soft murmuring of responsive Love.

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<sup>1</sup>Ibid., p. 100.

<sup>2</sup>Robert M. Maniquis, "The Puzzling Mimosa: Sensitivity and Plant Symbols in Romanticism," Studies in Romanticism, VIII (Spring, 1969), 129.

<sup>3</sup>Ibid., op. cit., pp. 34-35.



The finish'd work might Envy vainly blame,  
 And 'Kisses' was the precious Compound's name.  
 With half the God his Cyprian Mother blest,  
 And breath'd on Sara's lovelier lips the rest.<sup>1</sup>

The use of "Elixir," "flames," "process," "bubbled up," "Compound," and "Chemist" and the reference to the mixing of elements suggest his interest in chemistry.

This interest in chemistry is also obvious in his prose. For example, Coleridge discusses the relationship of hydrogen to oxygen, nitrogen, and carbon in one manuscript.<sup>2</sup> In another manuscript, he discusses "Imaginative Chemistry,"

Query. The sulphurous smell noticeable even in the air after great heats immediately before Storms with Thunder and the forked zig-zag Lightning--and intensely strong in rooms that have been struck with Lightning . . . does it proceed from Sulphur? If so, whence does the Sulphur come?

If there exist in Nature a power converting Nitrogene into Hydrogen, the latter being supposed the Protoxide, the former a Deutrooxide of the supposititious Ammonium or in a more philosophic Language, Nitrogene being the Base X in the condition of the +Magnetism, and Hydrogen the same Base under the condition of +Electricity, an intermediate or transitional state is conceivable, namely, that in which X is indifferently Base and Spirit, Base to A, Spirit or Modifier to B. And what [if] Sulphur were this product?<sup>3</sup>

Coleridge begins his "query" with a rather common observation concerning the "sulphurous smell" after a storm. He

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<sup>1</sup>Coleridge, The Poems of Samuel Taylor Coleridge, op. cit., pp. 46-47.

<sup>2</sup>Kathleen Coburn, Inquiring Spirit: A Coleridge Reader (New York: Minerva Press, 1968), p. 225.

<sup>3</sup>Ibid., p. 253.

concludes with a complex speculation on the origin of sulphur which indicates the depth of his interest in chemistry.

Coleridge's attitude toward a related science, mathematics, is clearly expressed in "His Neglected Tools of Reason." He sincerely regrets his limited knowledge of mathematics and feels a sense of loss, for he cannot develop some of his ideas. He states,

Next to that. . .I must place the neglect of Mathematics, under the strongest motives, and the most favorable helps and opportunities for acquiring them. Not a week passes in which I do not regret this Oversight of my Youth with a sort of remorse that turns it to a Sin.--this day I read the account of Faraday's Microphone and instantly recognized a fond and earnest dream-project of my own of 30 years' standing--with sundry other imaginations respecting what might be effected in the only embryo Science of Acoustics. The Walls of Jerico were to fall before my War-trumpet[s]. But where the Tools of my Reason? I had not the Organ of all Sciences that respect Space and Quantity. My Dreams were akin to Reason: but I could not awake out of my prophetic Sleep, to effectuate their objectivization--for I was ignorant of the Mathematics!<sup>1</sup>

This note appeared on a backleaf of Allgemeine Naturgeschichte by G. H. Schubert. Although Kathleen Coburn suggests that Coleridge's information was probably obtained from the Quarterly Journal of Science, Literature and Art<sup>2</sup> and not Faraday, Coleridge's respect for mathematics is nonetheless clearly stated.

"The Rime of the Ancient Mariner" reflects Coleridge's interest in yet another branch of science,

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<sup>1</sup>Ibid., pp. 251-252.

<sup>2</sup>Ibid., p. 430.

optics. The mariner watches the creatures of the great calm and reveals that

Beyond the shadow of the ship,  
I watched the water-snakes:  
They moved in tracks of shining white,  
And when they reared, the elfish light  
Fell off in hoary flakes.

Within the shadow of the ship  
I watched their rich attire:  
Blue, glossy green, and velvet black,  
They coiled and swam; and every track  
Was a flash of golden fire.

O happy living things! no tongue  
Their beauty might declare:  
A spring of love gushed from my heart,  
And I blessed them unaware:  
Sure my kind saint took pity on me,  
And I blessed them unaware.<sup>1</sup>

Lowes feels that this description of the water-snakes is reminiscent of a chapter, "Light from Putrescent Substance," from Priestley's Opticks, for he says Coleridge's description of the water-snakes closely parallels Priestley's use of colors. Lowes has verified that Coleridge was familiar with this work.<sup>2</sup>

Another scientific theory intriguing to Coleridge is the concept of evolution. Equally intriguing is an analysis of Coleridge's attitude toward evolution. One of the most disturbing comments on evolution is made by

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<sup>1</sup>Coleridge, The Poems of Samuel Taylor Coleridge, op. cit., p. 198.

<sup>2</sup>Lowes, op. cit., pp. 35-38.

Coleridge in "Aids to Reflection." The center of the controversy is Coleridge's use of the word "evolution" in the title of the tenth section, "The Evolution of Man."<sup>1</sup> Critics Beach and Bate represent opposing interpretations of Coleridge's attitude. Beach feels that modern critics often read the present meaning of evolution into Coleridge's use of the word and points out that at the turn of the nineteenth century evolution is often used to mean "scale of being." A letter from Coleridge to Wordsworth is quoted by Beach; in this he refers to "the absurd notion. . . of man's having progressed from an ourang-outang state."<sup>2</sup> Another aspect of evolution reportedly disturbing to Coleridge is that the theory of evolution contradicts certain assumptions involved in the Fall of Man. For these and other reasons, Beach concludes, "we may be perfectly confident that in his various accounts of the 'scale of being' he does not mean to imply anything like the modern scientific theory of evolution."<sup>3</sup>

Bate's summary of Coleridge's concept of evolution leads to a different conclusion. Bate feels "the surprise is that he went as far as he did without the backlog of investigation of which the natural philosopher of a century

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<sup>1</sup>Henry A. Beers (ed.), Selections from the Prose Writings of Samuel Taylor Coleridge (New York: Henry Holt and Company, 1893), pp. 100-101.

<sup>2</sup>Beach, op. cit., p. 335.

<sup>3</sup>Ibid.

and a half later can avail himself."<sup>1</sup> It seems to Bate that Coleridge anticipates to some extent "the belief of modern genetics that evolution proceeds through mutations."<sup>2</sup> Bate offers as supporting evidence Craig Miller's article, "Coleridge's Concept of Nature." Miller suggests that Coleridge's objections to the cruder aspects of evolution do not mean he is opposed to the general idea of evolution. Of particular interest is Miller's interpretation of the "Note on Giordano Bruno." After citing the part that is used as proof that Coleridge is against the theory of evolution, Miller notes that Coleridge

goes on to say that each "step" of creation "must be proceeded by a process of growth, and consequently a state of involution [concentration of the faculties, completion into a form] and latency correspondent to each successive Moment of Development."<sup>3</sup>

Although, Coleridge's attitude toward evolution is still being evaluated and previously unpublished work may clarify his position, it would seem that although he was receptive to new scientific learning it is doubtful that he used evolution in the modern sense. However, it is apparent that his interests include the question of man's origin.

Man's mind as well as man's origin interests Coleridge for, like Wordsworth, he understands the way a

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<sup>1</sup>Bate, op. cit., p. 194.

<sup>2</sup>Ibid.

<sup>3</sup>Ibid.

mind works. In his poem, "Pain," he expresses with great accuracy the effect pain has on an individual.<sup>1</sup> In contrast, he describes the soothing healing power nature offers man in "Fears in Solitude" as he describes "a quiet spirit-healing nook"<sup>2</sup> which renders him

. . .grateful, that by nature's quietness  
And solitary musings, all my heart  
Is softened, and made worthy to indulge  
Love, and the thoughts that yearn for human kind.<sup>3</sup>

In addition to this sublime influence on man's mind, Coleridge also recognizes less attractive influences. In his poem, "On Imitation," he describes a common pitfall,

All are not born to soar--and ah! how few  
In tracks where Wisdom leads their paths pursue!  
Contagious when to wit or wealth allied,  
Folly and Vice diffuse their venom wide.  
On Folly every fool his talent tries;  
It asks some toil to imitate the wise:  
Tho' few like Fox can speak--like Pitt can think--  
Yet all like Fox can game--like Pitt can drink.<sup>4</sup>

He even captures the less attractive, but very normal trait of selective imitation.

In addition to his understanding of the psychology of the "normal" human mind, Coleridge seems fascinated by abnormal psychology. Lowes suggests that this interest is vital to Coleridge's work. Lowes discusses "the strange fascination which abnormal psychology always exercised on

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<sup>1</sup>Coleridge, The Poems of Samuel Taylor Coleridge, op. cit., p. 17.

<sup>2</sup>Ibid., p. 257.

<sup>3</sup>Ibid., p. 263.

<sup>4</sup>Ibid., p. 26.

Coleridge--a fascination without which, after all, "The Rime of the Ancient Mariner" had never been."<sup>1</sup> Other poems also reflect Coleridge's interest in abnormal psychology, particularly, "Christabel" and "Kubla Khan." For example, in "Christabel" Coleridge explores the fascination of evil and its power over a "good" person.

No matter which branch of science is being dealt with, there are times when Coleridge must choose between scientific accuracy and poetic effect. Much like his literary predecessors he feels the poetic effect to be most important. Just as Milton had chosen to ignore recent science at times in favor of a more poetic expression of an idea, so at times Coleridge finds it necessary to forego scientific accuracy in favor of poetic effect. For example, in the poem, "Melancholy," Coleridge states, "The dark green Adder's Tongue was there." Coleridge's footnote explains that this is "a plant found on old walls and in wells and moist hedges.--It is often called Hart's Tongue." He adds his use of "Adder's Tongue" is "a botanical mistake. The plant I meant is called the Hart's Tongue, but this would unluckily spoil the poetical effect."<sup>2</sup> Scientific accuracy is desirable, but Coleridge is the

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<sup>1</sup>Lowes, op. cit., pp. 27-28.

<sup>2</sup>Coleridge, The Poems of Samuel Taylor Coleridge, op. cit., p. 74.

master, the creator, the user of knowledge and he must select and fuse the strands of knowledge to communicate his ideas.

Coleridge definitely is interested in science and uses knowledge gained in various scientific pursuits. However, like seventeenth century poets, he is aware of the limitations of scientific knowledge. With his insight into science, Coleridge perceives that science needs more than mathematical formulas and factual compilations. Therefore, he insists on the "importance of 'initiative thought' in scientific investigation."<sup>1</sup> After a discussion of Coleridge's "initiative thought," Beach observes that Coleridge has

. . .faith in speculative physics, which proceeds a priori and by "intuition," as the soul of true experiment and the mother of all great discoveries. From men capable of this procedure Coleridge looks to have a demonstration of "an unbroken series of correspondencies in nature."<sup>2</sup>

It is not surprising that Coleridge, who seeks science guided by "initiative thought," finds mere classification in science futile. When he attacks this approach to science in "The Friend," he draws his examples primarily from botany, and the chief recipient of his criticism is Linnaeus,

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<sup>1</sup> Beach, op. cit., p. 321.

<sup>2</sup> Ibid., pp. 323-324.



the great classifier.<sup>1</sup> For example, like many others, Coleridge voices his disapproval of botany at that time. He says that it is "little more than an enormous nomenclature; a huge catalogue, . . . yearly and monthly augmented, in various editions, each with its own scheme of technical memory and its own conveniences of reference!"<sup>2</sup> Although Coleridge feels that science should be free to explain nature, mere compilation of facts, is not the answer for scientific research and experimentation must be guided by "initiative thought." This distaste for mere classification is not a new complaint in English letters as the limitations of science as a complete source of knowledge have long received the poet's attention.

In addition to his realization that science is limited, Coleridge also recognizes certain limitations in the use of science in poetry. Lowes suggests that Darwin's science-laden Botanic Garden made little impression on Coleridge.<sup>3</sup> The title change of one of Coleridge's poems indicates the validity of Lowes' conclusion. The poem, "The Hour When We Shall Meet Again," was later reprinted "under 'the sportive title "Darwiniana," on the supposition

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<sup>1</sup>Ibid., p. 324.

<sup>2</sup>Coburn, op. cit., p. 247.

<sup>3</sup>Lowes, op. cit., p. 33.

that it was written' in half-mockery of Darwin's style with its dulcia vitia."<sup>1</sup> Although Coleridge is impressed with Darwin's early realization that "the physiological botanists were hunting in a false direction,"<sup>2</sup> he did not like Darwin's poetry or materialism.<sup>3</sup> This may explain, at least in part, Coleridge's lack of interest in poems devoted completely to science.

There does seem to be one exception, for Coleridge sent a poem on the topic of "A Mathematical Problem" to his brother, the Rev. George Coleridge, in 1791. Coleridge's motto for the poem,

If Pegasus will let thee only ride him,  
Spurning my clumsy efforts to o'erstride him,  
Some fresh expedient the Muse will try,  
And walk on stilts, although she cannot fly,<sup>4</sup>

seems to inadvertently describe the result of his experiment. The letter accompanying the poem explains Coleridge's intention:

Dear Brother,  
I have often been surprised that Mathematics,  
the quintessence of Truth, should have found  
admirers so few and so languid. Frequent con-  
sideration and minute scrutiny have at length

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<sup>1</sup>Coleridge, The Poems of Samuel Taylor Coleridge, op. cit., p. 96.

<sup>2</sup>Coburn, op. cit., p. 247.

<sup>3</sup>Maniquis, op. cit., p. 137.

<sup>4</sup>Coleridge, The Poems of Samuel Taylor Coleridge, op. cit., p. 21.

unravell'd the cause; viz. that though Reason is feasted, Imagination is starved; whilst Reason is luxuriating in its proper Paradise. Imagination is wearily travelling on a dreary desert. To assist Reason by the stimulus of Imagination is the design of the following production. In the execution of it much may be objectionable. The verse. . . may be accused of unwarrantable liberties, but they are liberties equally homogeneal with the exactness of Mathematical disquisition, and the boldness of Pindaric daring. I have three strong champions to defend me against the attacks of Criticism: the Novelty, the Difficulty, and the Utility of the work. I may justly plume myself that I first have drawn the nymph Mathesis from the visionary caves of abstracted idea, and caused her to unite with Harmony. The first born of the Union I now present to you; with interested motives indeed--as I expect to receive in return the more valuable offspring of your Muse.

Thine ever,  
S. T. C.

CHRIST'S HOSPITAL, March 31, 1791.<sup>1</sup>

An examination of the poem illustrates why Coleridge might be in need of "three strong champions" for his defense. The first two stanzas illustrate the fact that Coleridge is no more successful than Darwin when he makes extensive use of science in poetry.

This is now--this was erst,  
Proposition the first--and Problem the first.

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On a given finite line  
Which must no way incline;  
To describe an equi-  
--lateral Tri--  
--A, N, G, L, E.  
Now let A. B.  
Be the given line  
Which must no way incline;  
The great Mathematician  
Makes this Requisition,

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<sup>1</sup> Ibid., pp. 21-22.

That we describe an Equi--  
 --lateral Tri-  
 --angle on it:  
 Aid us, Reason--aid us, Wit!

## II

From the centre A. at the distance A. B.  
 Describe the circle B. C. D.  
 At the distance B. A. from B. the centre  
 The round A. C. E. to describe boldly venture.  
 (Third postulate see.)  
 And from the point C.  
 In which the circles make a pother  
 Cutting and slashing one another,  
 Bid the straight lines a journeying go.  
 C. A. C. B. those lines will show.  
 To the points, which by A. B. are reckon'd,  
 And postulate the second  
 For Authority ye know.  
 A. B. C.  
 Triumphant shall be  
 An Equilateral Triangle,  
 Not Peter Pindar carp, nor Zoilus can wrangle.<sup>1</sup>

This poem continues for two more stanzas and concludes with the lines, "And now our weary steed to rest in fine,/'Tis raised upon A. B. the straight, the given line."<sup>2</sup> Although Coleridge uses imagination, reason still seems to dominate the poem. He is unable to accomplish his objective, which is to draw "the nymph Mathesis from the visionary caves of abstracted idea," and cause "her to unite with Harmony."<sup>3</sup> It seems this particular mathematical problem is too specific and detailed to enable him to communicate any sublime ideas

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<sup>1</sup>Ibid., pp. 22-23.

<sup>2</sup>Ibid., p. 23.

<sup>3</sup>Ibid., p. 22.

behind the details. Therefore, he has not been able to "assist Reason" (communicate the beauty of a mathematical theory) by the "stimulus of Imagination." Whether intentional or not, "A Mathematical Problem" seems to present an excellent argument against the extensive use of science in poetry.

Coleridge's interest in science is quite evident. Dealing successfully with science is essential to his development as a philosopher. As seventeenth and eighteenth century poets had before him, Coleridge, too, sees God's wisdom revealed in nature and through the use of the telescope and the microscope, his admiration for science is expressed directly in his prose and poetry. Although he rarely uses science as the subject of a poem, his poetry reflects his interest in natural history, geography, chemistry, mathematics, optics, evolution, and psychology. Like previous poets who had used science in their poetry, he is willing to sacrifice scientific accuracy for poetic effect for he, too, finds that science has some limitations as a source of knowledge when it deteriorates into the compilation of facts. Lowe's summary seems an accurate one for "nobody who knows the period can dream of isolating the poetry from the ferment of its thought or of detaching Samuel Taylor Coleridge from that ferment."<sup>1</sup>

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<sup>1</sup>Lowe, op. cit., p. 213.

## CHAPTER V

### KEATS AND SCIENCE

A careful reading of the poetry of John Keats suggests that Whitehead's conclusion that "Keats is an example of literature untouched by science"<sup>1</sup> is an overstatement. Keats' poetry reflects the intellectual ferment of the period just as the poetry of Wordsworth and Coleridge does. Keats is involved with science practically, philosophically, and poetically.

Keats' early involvement with science is of a rather practical nature; he was preparing for a career in medicine. During this time, Keats knew and admired men associated with science. For example, he is said to have adored the great surgeon and teacher, Ashley Cooper.<sup>2</sup> Another man of science becomes important to Keats in his later years, Dr. Joseph Henry Green.

In addition to his admiration for men of science, Keats also shows an interest in his scientific studies. Sir Hale-White describes Keats as an indefatigable medical student and explains that

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<sup>1</sup>Whitehead, op. cit., p. 120.

<sup>2</sup>Sir William Hale-White, Keats as Doctor and Patient (London: Oxford University Press, 1938), pp. 18-19.

Keats came of industrious talented parentage, he had at school shown himself to be a great reader, he attended lectures diligently, he made copious notes of eleven out of a course of twelve, and he prepared for his qualifying examination in the shortest possible time and at the youngest possible age. . . . Keats presented himself for examination on the 25th of July, 1816. The Register of the Apothecaries Society shows that he produced a testimonial from Mr. Hammond, and that the lectures he had attended were those on anatomy and physiology, medicine, chemistry, and materia medica. He passed with ease: a creditable performance, for he had only been an apprentice for four years instead of five and he had only studied for ten months at the hospital.<sup>1</sup>

Yet soon after passing the qualifying examination he abandoned the study of medicine.

There seemed to be two basic reasons why Keats turned away from medicine. First, his love for poetry was growing rapidly as Sir Hale-White illustrates.<sup>2</sup> Secondly, due to conditions in the hospitals and the lack of anaesthetics, medicine was not compatible with Keats' temperament. As Keats explained,

My last operation was the opening of a man's temporal artery. I did it with the utmost nicety; but reflecting on what passed through my mind at the time, my dexterity seemed a miracle, and I never took up the lancet again.<sup>3</sup>

However, this decision to leave medicine should not be interpreted as an implicit criticism of science for

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<sup>1</sup>Ibid., pp. 31-32.

<sup>2</sup>Ibid., pp. 34-36.

<sup>3</sup>Ibid., p. 37.

Keats values his exposure to science. After giving up medicine, Keats expresses his feelings in a letter:

Were I to study physics or rather Medicine again, I feel it would not make the least difference to my Poetry; when the mind is in its infancy a Bias is in reality a Bias, but when we have acquired more strength, a Bias becomes no Bias. Every department of Knowledge we see excellent and calculated towards a great whole. I am so convinced of this, that I am glad at not having given away my medical Books, which I shall again look over to keep alive what I know thitherwards; and moreover intend through you and Rice to become a sort of pip-civilian. An extensive knowledge is needful to thinking people--it takes away the heat and fever; and helps, by widening speculation, to ease the Burden of the Mystery.<sup>1</sup>

Keats considers his study and knowledge of medical science as an asset, not a liability, for "every department of knowledge we see excellent and calculated towards a great whole."

Keats' conviction that "extensive knowledge is needful to thinking people" is indicative of his philosophy. For Keats, as it had for Coleridge, the ideal was a "great whole" or a unity. In this quest Keats is closely allied with the eighteenth century. For example, H. A. M. Snelders says,

The discovery of galvanic electricity (Galvani, Volta) and the chemistry of gases (Black, Cavendish, Priestly, Scheele), in the last decade of the eighteenth century, exerted an especially

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<sup>1</sup>Ibid., pp. 38-39.



great influence on the Romantic Movement, on the strength of their application to the problem of the life-process and the unity of inorganic and organic nature.<sup>1</sup>

Maniquis observes the same phenomena when he suggests that "throughout eighteenth-century poetry and science, attempts are made to find the one controlling vital principle or force that was usually grasped in only its isolated and varied modes."<sup>2</sup>

This philosophical interest in unity is present in Keats' poetry. For example, in "Endymion" he describes a poet searching for the ideal. Endymion says he is

. . .not ignorant though,  
That those deceptions which for pleasure go  
'Mong men, are pleasure real as real may be:  
But these are higher ones I may not see,  
If impiously an earthly realm I take.<sup>3</sup>

"Endymion" deals with the desire for the ideal, the difficulty of attainment, and the necessity of reconciling the ideal and the real. This ideal also plays a role in "The Fall of Hyperion." For example, a series of questions directed at a veiled figure, and her subsequent answers, reveals what constitutes "true" poetry.<sup>4</sup> Douglas Bush

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<sup>1</sup>E. A. M. Snelders, "Romanticism and Naturphilosophie and the Inorganic Natural Sciences 1797-1840: An Introductory Survey," Studies in Romanticism, IX (Summer, 1970), 195.

<sup>2</sup>Maniquis, op. cit., p. 151.

<sup>3</sup>John Keats, The Complete Poetical Works and Letters of John Keats, ed. Horace E. Scudder (Boston: Houghton, Mifflin Company, 1899), p. 107.

<sup>4</sup>Ibid., pp. 234-236.

feels that "Keats was always striving for unity: in 'Endymion,' he had attempted to unite the ideal and the real, and in the two 'Hyperions' he was to do so again."<sup>1</sup>

This practical and philosophical interest in science bears poetic fruit in a number of ways. Keats' poetry reveals, for example, his warning concerning the perils of too much science or too much knowledge of any kind. Like poets of the two previous centuries and Wordsworth and Coleridge, Keats delineates the limitations of science as a source of knowledge. In "Sleep and Poetry" Keats says,

Could all this be forgotten? Yes, a schism  
Nurtured by foppery and barbarism,  
Made great Apollo blush for this his land.  
Men were thought wise who could not understand  
His glories: with a pulling infant's force  
They swayed about upon a rocking horse,  
And thought it Pegasus. Ah, dismal souled!  
The winds of heaven blew, the ocean rolled  
Its gathering waves--ye felt it not. The blue  
Bared its eternal bosom, and the dew  
Of summer nights collected still to make  
The morning precious; beauty was awake!  
Why were ye not awake? But ye were dead  
To things ye knew not of,--were closely wed  
To musty laws lined out with wretched rule  
And compass vile. . . .<sup>2</sup>

Keats chides those who are dead, whose perception is bound by "musty laws lined out with wretched rule/And compass vile,"

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<sup>1</sup>Douglas Bush, "Keats," Keats, ed. Walter Jackson Bate (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1964), p. 24.

<sup>2</sup>Keats, op. cit., pp. 20-21.

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for like Wordsworth and Coleridge, he feels that there is much in life that cannot be measured or prescribed. Yet Keats, too, realizes that not only men of science are guilty of this error. Later in the same poem, Keats assails "a school/Of do lts to smooth, inlay, and clip, and fit,/ Till. . .their verses tallied."<sup>1</sup> Therefore, he is equally critical of "prescribed poetry."

Another suggestion of the limitations of science appears in "Lamia." Lamia is described as being

Not one hour old, yet of sciential brain  
To unperplex bliss from its neighbour pain:  
Define their pettish limits and estrange  
Their points of contact, and swift counterchange;  
Intrigue with the specious chaos, and dispart  
Its most ambiguous atoms with sure art.<sup>2</sup>

The "sciential brain" defines "pettish limits" and estranges "points of contact" or, as Wordsworth says, multiplies distinctions. A science interested in categorizing leads away from any unity of thought. Thus Keats, in keeping with his philosophical search for unity, continues the poetic tradition of chastising science that is interested solely in distinctions.

Later in "Lamia," as Keats assails "cold philosophy," scientific cataloging is depicted much as in Wordsworth's line, "We murder to dissect." Keats muses,

Do not all charms fly  
At the mere touch of cold philosophy?  
There was an awful rainbow once in heaven:

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<sup>1</sup>Ibid., p. 21.

<sup>2</sup>Ibid., p. 149.

We know her woof, her texture; she is given  
 In the dull catalogue of common things.  
 Philosophy will clip an Angel's wings  
 Conquer all mysteries by rule and line,  
 Empty the haunted air, and gnomed mine--  
 Unweave a rainbow. . . .<sup>1</sup>

The once awesome spectacle of the rainbow is gone. Her "woof" and texture are known and the mystery and glory have disintegrated. She has become part of the "dull catalogue of common things" as man conquers "all mysteries by rule and line."

This suggestion of an indictment against too much knowledge of any kind is carefully delineated later in his "Epistle to John Hamilton Reynolds,"

Dear Reynolds! I have a mysterious tale,  
 And cannot speak it: the first page I read  
 Upon a Lampit rock of green sea-weed  
 Among the breakers; 'twas a quiet eve,  
 The rocks were silent, the wide sea did weave  
 An untumultuous fringe of silver foam  
 Along the flat brown sand; I was at home  
 And should have been most happy,--but I saw  
 Too far into the sea, where every maw  
 The greater on the less feeds evermore.--  
 But I saw too distinct into the core  
 Of an eternal fierce destruction,  
 And so from happiness I far was gone.  
 Still am I sick of it, and tho', to-day,  
 I've gather'd young spring-leaves, and flowers gay  
 Of periwinkle and wild strawberry,  
 Still do I that most fierce destruction see,--  
 The Shark at savage prey,--the Hawk at pounce,--  
 The gentle Robin, like a Pard or Ounce,  
 Ravening a worm,--Away, ye horrid moods!

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<sup>1</sup>Ibid., p. 156.

Moods of one's mind! You know I hate them well.  
 You know I'd sooner be a clapping Bell  
 To some Kamtschatcan Missionary Church,  
 Than with these horrid moods be left i' the lurch.<sup>1</sup>

Even the beauty of the sea is destroyed if examined too closely. On this subject Thora Balslev suggests that Keats and Wordsworth share a similar reaction, which is that "the holiness of all created things is profaned when scientific curiosity prompts the intellect to exert its powers for the sole end of particular knowledge of the isolated phenomena."<sup>2</sup> The price of abused science is too high.

In his poem, "Fancy," Keats develops a related idea. As he describes fragile and delicate fancy, Keats also points out the destructiveness of misleading knowledge:

Ever let the Fancy roam,  
 Pleasure never is at home:  
 At a touch sweet Pleasure melteth,  
 Like to bubbles when rain pelteth;  
 Then let winged Fancy wander  
 Through the thought still spread beyond her:  
 Open wide the mind's cage-door,  
 She'll dart forth, and cloudward soar.  
 . . . . .  
 Oh, sweet Fancy! let her loose;  
 Everything is spoilt by use:  
 Where's the cheek that doth not fade,  
 Too much gazed at?<sup>3</sup>

Keats, who along with his fellow Romantics accentuates

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<sup>1</sup>Ibid., pp. 241-242.

<sup>2</sup>Thora Balslev, Keats and Wordsworth (Folcroft, Pennsylvania: Folcroft Press, Inc., 1969), p. 179.

<sup>3</sup>Keats, op. cit., pp. 124-125.

"interfusion not classification,"<sup>1</sup> is aware of the distortion of a science-oriented picture, but he seems equally cautious of any other lopsided views.

Although W. P. Jones seems to support this conclusion, he gives another dimension to the philosophical problem involved. After mentioning Keats' protest against the "dissection of a rainbow," Jones concludes:

And yet the hostility of Keats and Wordsworth, to a certain extent even of Blake, is only on the surface, for their main theme is the physico-theological one of the wisdom of God in nature, which the scientific poets of the eighteenth century had brought to them in varying and sublime examples. They distrusted the science that they could not understand, and by 1800 much of it must properly have seemed to them cold, materialistic, and forbidding. Furthermore, the sublime had gone out of most scientific poetry, especially in that most notorious example near the end of the century, Erasmus Darwin's The Loves of the Plants. It is a far cry from unnumbered worlds in unmeasured space to a violet by a mossy stone, but images from natural history lead just as surely to an understanding of divine order in nature as those from astronomy. The imagery changed from blazing comets and the orderly world in a drop of pond scum to an impulse from a vernal wood, but the change did not obscure the underlying continuity of ideas.<sup>2</sup>

Although Keats is well aware of the limitations of science, he continues, as other poets before him, to use scientific discoveries to lead to "an understanding of divine order in nature."

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<sup>1</sup>Macniquis, op. cit., p. 154.

<sup>2</sup>W. P. Jones, op. cit., p. 233.

In the poetry of Keats it is possible to see this "main theme. . .the physico-theological" one of the wisdom of God in nature." Keats makes a number of direct references to the wisdom in nature, ranging from a source of delightful stories to a source of universal knowledge. For example, in "On First Looking into Chapman's Homer," he calls nature the "Maker of sweet poets" and says,

Thee must I praise above all other glories  
That smile on us to tell delightful stories.  
For what has made the sage or poet write,  
But the fair paradise of Nature's light?<sup>1</sup>

Keats finds wisdom expressed in roses, as in "To a Friend Who Sent Me Some Roses." He says, "Soft voices had they, that with tender plea/Whisper'd of peace, and truth, and friendliness unequell'd."<sup>2</sup> The soft voices speak more firmly in "I Stood Tiptoe," for Keats feels,

Why, you might read two sonnets, ere they reach  
To where the hurrying freshnesses aye preach  
A natural sermon o'er their pebbly beds.<sup>3</sup>

One of the claims made for nature is voiced in "Endymion,"

And wither drearily on barren moors:  
Dread opener of the mysterious doors.<sup>4</sup>  
Leading to universal knowledge. . . .

Keats often makes poetic reference to nature as a source of wisdom.

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<sup>1</sup>Keats, op. cit., p. 16.      <sup>2</sup>Ibid., p. 13.

<sup>3</sup>Ibid., p. 15.      <sup>4</sup>Ibid., p. 53.

As Jones points out, "images from natural history lead just as surely to an understanding of divine order in nature as those from astronomy,"<sup>1</sup> and Keats' poetry is filled with images taken from natural history. For example, the divine order in nature is reflected in "Endymion" as the poet sees that "Broad leaved fig trees even now foredoom/ Their ripened fruitage."<sup>2</sup> This never-ending cycle of life and death reaffirms the underlying order in the universe, just as the seasons do. Flowers are used by Keats in "Ode to a Nightingale" to show the rhythmical change of seasons, from spring to summer,

Fast fading violets covered up in leaves;  
And mid-May's eldest child,  
The coming musk rose, full of dewy wine,  
The murmurous haunt of flies on summer eves.<sup>3</sup>

The common oak becomes an affirmation of permanence of the divine order revealed in nature in an "Epistle to George Felton" when Keats speaks of a grove "where oaks, that earst the Druid knew, are growing."<sup>4</sup> A grove of ancient oaks, fruit-laden fig trees, and fading violets all become reflections of the divine order revealed in nature.

The revelation of order is only one of the purposes served by natural history in Keats' poetry. Most of his references to nature are to convey his own feelings and

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<sup>1</sup>W. P. Jones, loc. cit.

<sup>2</sup>Keats, op. cit., p. 52.

<sup>3</sup>Ibid., p. 144.

<sup>4</sup>Ibid., p. 10.



reactions. However, as he celebrates the plant and animal kingdoms, he reveals an interest in knowledge provided by the study of natural history. For example, he makes poetic use of yew, fig, blossoming lime, palm, myrtle, oak, sycamore, beech, plantane, and spice-blossom trees. Some of these trees are not indigenous to his own country and suggest that through conversation or reading Keats' poetic reservoir was enlarged by the interest in natural history. Another possible instance of this influence is his description of a kingfisher, fish, and swan in "Imitation of Spenser." His description is as detailed and accurate as the elaborate plates appearing at that time in natural history magazines,

There the king-fisher saw his plumage bright  
 Vying with fish of brilliant dye below;  
 Whose silken fins, and golden scales' light  
 Cast upward, through the waves, a ruby glow;  
 There saw the swan his neck of arched snow,  
 And oared himself along with majesty;  
 Sparkled his jetty eyes; his feet did show  
 Beneath the waves like Afric's ebony,  
 And, on his back a fay reclined voluptuously.<sup>1</sup>

In a similar passage, the goldfinch comes under close scrutiny in "I Stood Tiptoe,"

Sometimes Goldfinches one by one will drop  
 From low hung branches: little space they stop:  
 But sip, and twitter, and their feathers sleek:  
 Then off at once, as in a wanton freak:  
 Or perhaps, to show their black and golden wings,  
 Pausing upon their yellow flutterings.<sup>2</sup>

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<sup>1</sup> Ibid., p. 1.

<sup>2</sup> Ibid., p. 15.

Such detailed descriptions suggest an interest in nature, intensified by the interest in natural history at that time.

Keats is not only a careful observer of nature, but also an impartial one. And like Wordsworth, Keats is aware of the duality in nature, the good and the evil. In "Woman! When I Behold Thee Flippant, Vain," Keats applies the adjective "greedy" to the shark.<sup>1</sup> The unpleasantness of the word receives emphasis from the passage quoted earlier, in which Keats describes the "eternal fierce destruction" he saw "where every maw/The greater on the lesser feeds evermore."<sup>2</sup> This vision is especially disturbing to Keats when he leaves the sea and directs his attention inland for he sees the same destruction. The hawk is like the shark and even the gentle robin is "ravaging." In "Endymion" Keats describes how "all the pleasant hues/Of heaven and earth had faded" and the rills "seemed sooty, and o'erspread with upturned gills/Of dying fish."<sup>3</sup> Nature is not always beautiful in reality or in Keats' poetry.

As Jones points out, poets of the eighteenth century had shown "varying and sublime examples" of the physico-theological theme of the "wisdom of God in nature."<sup>4</sup> As

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<sup>1</sup>Ibid., p. 2.

<sup>2</sup>Ibid., pp. 241-242.

<sup>3</sup>Ibid., p. 59.

<sup>4</sup>Jones, loc. cit.

mentioned earlier, most examples of this theme during the eighteenth century concern the revelations of the telescope and microscope. Although most of Keats' images connected in some way with science come from the realm of natural history, he, too, uses the telescope and the microscope. To describe his feeling on first reading Chapman's Homer, Keats says, "Then felt I like some watcher of the skies/  
When a new planet swims into his ken."<sup>1</sup> These lines reflect the same sense of awe a scientific discovery provoked in earlier poets. Keats again reaches to the heaven to describe harmony, poised "Huge as a planet, and like that roll round,/  
Eternally around a dizzy void."<sup>2</sup> The image of the planets spinning in their prescribed orbits appears again in "The Fall of Hyperion":

Moan, brethren, moan; for lo, the rebel spheres  
Spin round; the stars their ancient courses keep;  
Clouds still with shadowy moisture haunt the earth  
Still suck their fill of light from sun and moon.<sup>3</sup>

Scientific discoveries and poetic imagery also mix in "Endymion." In describing his sense of enchantment, Keats says,

. . . Methought I lay  
Watching the zenith, where the milky way  
Among the stars in virgin splendor pours:  
And travelling my eye, until the doors  
Of heaven appeared to open for my flight

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<sup>1</sup>Keats, op. cit., p. 9.

<sup>2</sup>Ibid., p. 20.

<sup>3</sup>Ibid., p. 237.

I became loth and fearful to alight  
 From such high soaring by a downward glance:  
 So kept me steadfast in that airy trance,  
 Spreading imaginary pinions wide.  
 When presently, the stars began to glide,  
 And faint away, before my eager view:  
 At which I sighed that I could not pursue,  
 And dropped my vision to the horizon's verge;  
 And lo! from opening clouds, I saw emerge  
 The loveliest moon, that ever silvered o'er  
 A shell for Neptune's goblet: She did soar  
 So passionately bright, my dazzled soul  
 Commingling with her argent spheres did roll  
 Through clear and cloudy, even when she went  
 At last into a dark and vapoury tent--  
 Whereat, methought, the lidless-eyed train  
 Of planets all were in the blue again.

. . . . .  
 I felt upmounted in that region  
 Where falling stars dart their artillery forth,  
 And eagles struggle with the buffeting north  
 That balances the heavy meteor-stone:--  
 Felt too, I was not fearful, nor alone,  
 But lapp'd and lull'd along the dangerous sky.<sup>1</sup>

In this passage the planets, Neptune's goblets, stars and meteor stones are used to express the ideal in Endymion's dream. Keats still feels the glory and wonder earlier poets associated with scientific discoveries connected with the telescope.

The examples of Keats' use of the revelations of the microscope and the microcosm seem more limited. In "Sleep and Poetry" he expresses directly the idea of the day as a microcosm of life:

Stop and consider! life is but a day:  
 A fragile dewdrop on its perilous way

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<sup>1</sup>Ibid., pp. 57-58.

From a tree's summit; a poor Indian's sleep  
While his boat hastens to the monstrous steep  
Of Montmorenci. Why so sad a moan?<sup>1</sup>

Life is mirrored not only in a day, but also in a fragile dewdrop. The idea of the teeming life in a drop of pond water, which was a very popular concept, seems to find beautiful poetic expression in "Endymion":

. . .The Morphean fount  
Of that fine element that visions, dreams,  
And fitful whims of sleep are made of, streams  
Into its airy channels with so subtle,  
So thin a breathing, not the spider's shuttle,  
Circled a million times within the space  
Of a swallow's nest-door, could delay a trace  
A tinting of its quality: how light  
Must dreams themselves be: seeing they're more  
    slight  
Than the mere nothing that engenders them!<sup>2</sup>

The spider's web is used to express the quality of sleep Keats is describing. Although there are definitely more images taken from astronomy and natural history, the microcosm best reveals wisdom and order to Keats.

There are other brief indications of the influence of science on the poetry of John Keats. Chemical vapors drift faintly across his poetry. For example, in "To Fanny" he pleads, "Withhold no atom's atom or I die."<sup>3</sup> Less dramatic are his references to sulphur<sup>4</sup> and phosphor.<sup>5</sup>

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<sup>1</sup>Ibid., p. 19.

<sup>2</sup>Ibid., pp. 59-60.

<sup>3</sup>Ibid., p. 215.

<sup>4</sup>Ibid., p. 206.

<sup>5</sup>Ibid., p. 48.

Another possible use of scientific information can be seen in the application of the idea of metamorphosis in "Endymion" and "Lamia."

Travel literature aids and abets Keats' interest in natural history. This interest is expressed by the inclusion of the flora and fauna of other lands. In "Endymion" the lynx, dolphin, vulture, lion, and crocodile all appear.<sup>1</sup> In the same section, Keats compares the holding of his

. . .recollection, even as one  
Who dives three fathoms where the waters run  
Gurgling in the beds of coral. . . .<sup>2</sup>

Just as Keats uses coral beds to describe his recollection, he utilizes exotic imagery in his description of Lamia,

She was a gordian shape of dazzling hue,  
Vermilion-spotted, golden, green, and blue;  
Striped like a zebra, freckled like a pard,  
Eyed like a peacock, and all crimson barred;  
And full of silver moons, that, as she breathed,  
Dissolved, or brighter shone, or interwreathed.<sup>3</sup>

This description makes use of the zebra, leopard, and peacock to convey an impression of her appearance. In another description, in the "Eve of St. Agnes," the products of travel spill forth,

And still, she slept an azure-lidded sleep,  
In blanched linen, smooth, and lavender'd,  
While he from forth the closet brought a heap  
Of candied apple, quince, and plum, and gourd;

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<sup>1</sup>Ibid., pp. 50-59.

<sup>2</sup>Ibid., p. 58.

<sup>3</sup>Ibid., p. 147.

With jellies soother than creamy curd,  
 And lucent syrops, tinct with cinnamon;  
 Manna and dates, in argosy transferr'd  
 From Fez; and spiced dainties, every one,  
 From silken Samarcand to cedar'd Lebanon.<sup>1</sup>

Specific references to travel and explorers occur in Keats' poetry. For example, in "To the Nile" Keats refers to the "Son of the old moon-mountained African!/  
 Chief of the Pyramid and Crocodile!"<sup>2</sup> In the well-known passage from "On First Looking into Chapman's Homer," Keats compares his sense of discovery with the feeling of an explorer.

Or like stout Cortez when with eagle eyes  
 He stared on the Pacific--and all his men  
 Looked at each other with a wild surmise--  
 Silent, upon a peak in Darien.<sup>3</sup>

Even though he names the wrong explorer, the interest and excitement is there nonetheless. These and many other uses demonstrate Keats' interest in natural history supplemented by knowledge filtered through travel literature.

Keats is involved with science, practically, philosophically, and poetically. As a medical student, he gains scientific knowledge he feels to be important even after his decision to terminate his studies. Keats values his scientific knowledge for as a philosopher he feels "every department of knowledge we see excellent and calculated towards a great whole."<sup>4</sup> His poetry reveals his interest

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<sup>1</sup>Ibid., p. 132.

<sup>2</sup>Ibid., p. 41.

<sup>3</sup>Ibid., p. 9.

<sup>4</sup>Hale-White, op. cit., p. 39.

in several ways. His poetry continues the tradition of poetic recognition of the limitations of science. Keats, as other poets before him, also continues the revelation of order in the world, most particularly with images selected from natural history. Like Wordsworth, he also presents a realistic description of nature. Contrary to Whitehead's statement, Keats' poetry is not an "example of literature untouched by science."<sup>1</sup>

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<sup>1</sup>Whitehead, loc. cit.



## CHAPTER VI

### CONCLUSIONS

C. M. Bowra contends that "in rejecting philosophy and natural science, the Romantics accentuated the isolation of poetry from the current thought of their time."<sup>1</sup> This evaluation of the Romantics' attitude is not uncommon; however, such evaluations cannot be held valid for two reasons.

First, the Romantics and their poetry were not isolated from the eighteenth century. As Bate explains, they "after all, were born in that century and were very much products of it. . .one of the principal interests of a period was the youth it produced and educated."<sup>2</sup> Too much emphasis has been placed on the ways the Romantics differed from their predecessors.

Secondly, because the Romantics were not isolated from the eighteenth century, any meaningful evaluation of their attitude toward and use of science in their poetry must also consider the attitude toward and use of science in the two preceding centuries. Within this frame of reference, it seems the Romantics continue to know and use science much as their literary predecessors had.

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<sup>1</sup>C. M. Bowra, The Romantic Imagination (New York: Oxford University Press, 1961), p. 289.

<sup>2</sup>Bate, Coleridge, op. cit., p. xii.

During the Romantic period of English poetry, just as in the two preceding centuries, poets varied in their knowledge and use of science. As most studies prove, Shelley was very familiar with science, loved it, and used it lavishly in his poetry. In contrast, reactions vary concerning the use of science by Coleridge, Wordsworth and Keats. Wordsworth and Keats are often accused of disliking science. The conclusion of this study is that, like their predecessors, Wordsworth, Coleridge, and Keats all knew, respected, and used science in their poetry, in varying degrees. Of the three, Coleridge seemed to know and use science the most and Keats, the least.

The poets of the Romantic period continued to keep science in its "place." They valued science and its contributions to man's knowledge, but realized it did not offer ultimate knowledge. Wordsworth warned against unwarranted dissection for the result is a distorted view; Coleridge sought knowledge from all sources; and Keats recognized the value of imagination or fancy. These views have been interpreted as blanket indictments against science. However, it seems rather that all three poets were seeking a broader view and disliked any distortion that would prevent the attainment of their goal. Their recognition of the limitations of science was never as hostile as the stinging indictments penned by Pope and Swift.

Another observable trend was the exploration of the physico-theological theme. Although it is possible to find in their works some of the scientific imagery prominent in the two preceding centuries, usually imagery derived from astronomy and the microscope, the influence of science is seen primarily in the imagery taken from natural history, which is most often used to reveal the wisdom or order in nature. As with earlier poets, when necessary, scientific exactness was sacrificed for poetic effect. As W.P. Jones summarized the Romantics' link with earlier poets, they represent "a continuation of what had been said, however feebly, in hundreds of scientific poems of the eighteenth century."<sup>1</sup> Therefore, it would seem that the contemporary literary hostility toward science did not spring from the Romantics.

A micro-biologist, Catherine Roberts, has expressed deep concern caused by the contemporary scientific-literary dichotomy. She suggests the way to blend the best of the two cultures is selectivity, quality not quantity.<sup>2</sup> Perhaps this blend is just what the Romantics achieved. The influence of science on their poetry is not a blatant one,

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<sup>1</sup>Ibid., p. 227.

<sup>2</sup>Catherine Roberts, "Nightingale, Hawks and the Two Cultures," The Antioch Review, XXV (Summer, 1965), 221-238.

rather a quiet, sustaining, nourishing one. It was a deep spring, welling up more incessantly each day during this period. Perhaps the Romantics, rather than ignoring or distrusting or damning the spring, drank very carefully and only to the degree that each one could nourish his spirit and his art.

BIBLIOGRAPHY

## BIBLIOGRAPHY

- Abrams, M. H. (ed.). English Romantic Poets. New York: Oxford University Press, Inc., 1960.
- Ashe, T. (ed.). The Table Talk and Omniana of Samuel Taylor Coleridge. London: George Bell and Sons, 1888.
- Balslev, Thora. Keats and Wordsworth. Folcroft, Pennsylvania: The Folcroft Press, Inc., 1969.
- Bate, Walter Jackson. Coleridge. New York: The Macmillan Company, 1968.
- \_\_\_\_\_. (ed.). Keats. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1964.
- Beach, Joseph Warren. The Concept of Nature in Nineteenth-Century English Poetry. New York: Pageant Book Company, 1956.
- Beers, Henry A. (ed.). Selections from the Prose Writings of Samuel Taylor Coleridge. New York: Henry Holt and Company, 1893.
- Bernbaum, Ernest (ed.). Anthology of Romanticism. New York: The Ronald Press Company, 1948.
- Bowra, C. M. The Romantic Imagination. New York: Oxford University Press, 1961.
- Bryan, William Lowe. Wars of Families of Minds. New Haven: Yale University Press, 1940.
- Bush, Douglas. Mythology and the Romantic Tradition in English Poetry. New York: Pageant Book Company, 1957.
- \_\_\_\_\_. Science and English Poetry. New York: Oxford University Press, 1950.
- Butter, Peter. Shelley's Idols of the Cave. Edinburgh: University Press, 1954.
- Clifford, James L. (ed.). Eighteenth-Century English Literature. New York: Oxford University Press, 1959.

- Coburn, Kathleen (ed.). Coleridge. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1967.
- \_\_\_\_\_. Inquiring Spirit: A Coleridge Reader. New York: Minerva Press, 1968.
- Coffin, Robert P. and Alexander M. Witherspoon (eds.). Seventeenth-Century Prose and Poetry. New York: Harcourt, Brace and Company, 1946.
- Coleridge, Samuel Taylor. Aids to Reflection and the Confessions of an Inquiring Spirit. London: George Bell and Sons, 1884.
- \_\_\_\_\_. Biographia Literaria. 2 vols. London: William Pickering, 1847.
- \_\_\_\_\_. The Poems of Samuel Taylor Coleridge. Edited by Ernest Hartley Coleridge. London: Oxford University Press, 1967.
- Colvin, Sidney. John Keats. New York: Charles Scribner's Sons, 1917.
- Daiches, David. A Critical History of English Literature. 2 vols. New York: The Ronald Press Company, 1960.
- Davis, Jack (ed.). Discussions of William Wordsworth. Boston: D. C. Heath and Company, 1964.
- DeSelincourt, Ernest. The Early Wordsworth. Great Britain: The English Association, 1936.
- \_\_\_\_\_. (ed.). Journals of Dorothy Wordsworth. London: Macmillan and Company, Ltd., 1941.
- Donne, John. The Complete Poetry and Selected Prose of John Donne. Edited by Charles M. Coffin. New York: Random House, 1952.
- Dunklin, Gilbert T. (ed.). Wordsworth. Princeton, New Jersey: Princeton University Press, 1941.
- Eliot, Charles W. (ed.). Essays, Civil and Moral and The New Atlantis: Areopagitica and Tractate on Education; and Religio Medici. Vol. III of The Harvard Classics. New York: P. F. Collier and Sons, 1904.

Fairchild, Hoxie Neal. Romantic Faith, 1780-1830. Vol. III of the Religious Trends in English Poetry. 4 vols. New York: Columbia University Press, 1949.

\_\_\_\_\_. The Romantic Quest. New York: Russell and Russell, Inc., 1965.

Foster, Richard. The New Romantics. Bloomington, Indiana: Indiana University Press, 1962.

Guerard, Albert, Jr. "Prometheus and the Aeolian Lyre," The Yale Review, XXXIII (March, 1944), 482-497.

Hale-White, Sir William. Keats as Doctor and Patient. London: Oxford University Press, 1938.

Hartman, Geoffrey H. Wordsworth's Poetry, 1787-1814. New Haven: Yale University Press, 1964.

Johnson, Samuel. Lives of the Most Eminent English Poets. 2 vols. Philadelphia: Claxton, Remsen and Haffelfinger, 1868.

Jones, William Powell. The Rhetoric of Science. Berkeley: University of California Press, 1966.

Keats, John. The Complete Poetical Works and Letters of John Keats. Edited by Horace E. Scudder. Boston: Houghton, Mifflin Company, 1899.

King-Hele, Desmond. Shelley, His Thought and Work. London: Macmillan and Company, Ltd., 1960.

Kroiter, Harry P. "The Influence of Popular Science on William Cowper," Modern Philology, LXI (May, 1964), 281-287.

Lacey, Norman. Wordsworth's View of Nature. Hamden, Connecticut: Archon Books, 1965.

Lowes, John Livingston. The Road to Xanadu. New York: Vintage Books, Inc., 1959.

Maniquis, Robert M. "The Puzzling Mimosa: Sensitivity and Plant Symbols in Romanticism," Studies in Romanticism, VIII (Spring, 1969), 129-155.

McKenzie, A. E. E. The Major Achievements of Science. 2 vols. Cambridge: University Press, 1960.



- McLuhan, Marshall. The Medium Is the Massage. New York: Random House, 1967.
- Meyers, F. W. H. Wordsworth. New York: Harper and Brothers, 1881.
- Nabholtz, John R. "Wordsworth's Guide to the Lakes and the Picturesque Tradition," Modern Philology, LXI (May, 1964), 288-297.
- Nicolson, Marjorie. Science and Imagination. Ithaca, New York: Cornell University Press, 1956.
- Perkins, David. The Quest for Permanence. Cambridge, Massachusetts: Harvard University Press, 1959.
- Potts, Abbie Findlay. Wordsworth's Prelude. Ithaca, New York: Cornell University Press, 1953.
- Raven, Charles E. Science, Religion, and the Future. New York: The Macmillan Company, 1943.
- Ridley, M. R. Keats' Craftsmanship. Lincoln: University of Nebraska Press, 1963.
- Roberts, Catherine. "Nightingale, Hawks and the Two Cultures," The Antioch Review, XXV (Summer, 1965), 221-238.
- Rogers, Neville. Shelley at Work. London: Oxford at the Clarendon Press, 1967.
- Snelders, H. A. M. "Romanticism and Naturphilosophie and the Inorganic Natural Sciences 1797-1840: An Introductory Survey," Studies in Romanticism, IX (Summer, 1970), 193-215.
- Stallknecht, Newton Phelps. Strange Seas of Thought. Durham: Duke University Press, 1945.
- Wargoner, Hyatt Howe. The Heel of Elobim. Norman: University of Oklahoma Press, 1950.
- West, Paul (ed.). Byron. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1964.
- Whitehead, Alfred North. Science and the Modern World. New York: The Macmillan Company, 1926.

Wordsworth, William. Prefatory Essays, Postscripts and Notes. Vol. X of The Complete Poetical Works of William Wordsworth. 10 vols. Boston: Houghton Mifflin Company, 1911.

\_\_\_\_\_. The Poetical Works of Wordsworth. Edited by Thomas Hutchinson. London: Oxford University Press, 1966.